December 16, 1961
Vol. 161 — No. 25

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

This Laredo, Tex. lass is prepared just in case she gets any calls while she's in her 10-foot-high backyard treehouse. Miss Valerie Leyendecker's yellow treehouse telephone has a turn-button to enable her to use either of family's two lines. Southwestern Bell Installer Berry Reed made the sale; story, p. 48.

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GLORY to GOD in highest
HIS peace for men on

Heaven and on earth
whom HIS favor rests.

LUKE: 2, 14

GENERAL DYNAMICS | TELECOMMUNICATION GIIIIIIIID

FLASHES AND PLUGS

ONE FOR THE GAZERS. At Hicksville, L.I., N.Y., an electronic company telephone operator, Mrs. Patricia Notaro, may have made window gazing pay off.

The day after Thanksgiving, Mrs. Notaro happened to be looking out the window when her boss, Saul Becker, office manager of Dynamic Magnetic Devices, Inc., and a maintenance foreman, Harlan Crandall, drove up into the parking lot in Becker's car. They were carrying the company's weekly payroll for 60 employes, amounting to $9,000.

The operator saw two holdup men step up to the car with drawn guns, and she also saw Becker and Crandall get into the back seat—in short, she saw what looked like kidnapping, as well as robbery!

Because she happened to be looking, when she telephoned the police, she could describe not only the car, but the holdup men. As a result of her call, heard by a radio patrolman on the beat, police merged on an intersection and blocked it five ways. The robbers came out with their hands up.

•

LOST—ONE CUSTOMER! The Burlington (Colo.) "Record" vouches for the fact that a woman there telephoned a grocery to complain about apples that had been sent to her. Three were rotten, she reported, and she was going to send them back.

The grocery clerk who answered the telephone said, "That's all right, Ma'am, you needn't bring them back. Your word is just as good as the apples."

•

CONNUBIAL FORGET-ERY. A devoted husband was at home composing a letter of regret that he could not attend the wedding of a friend's daughter. He waxed sentimental in his note, finally arriving at the point where he said he hoped that the young couple "would be as happy as we have been for 14 years". . .

Then, the "14 years" part hit him like a bomb—this was the precise day of his own wedding anniversary, and he had completely forgotton!

He cautiously telephoned his wife, who was attending an evening meeting. Had she remembered? He was much relieved when she admitted that she, too, had forgotten.

•

FAMILY OR FAN? Recently host to the World Series games, Cincinnati boasts both a Maris and a Mantle as residents, according to the telephone directory.

J. Brown Mantle, when queried, said he had never heard of Mickey's end of the family. He also announced that he was definitely a Cincinnati Redlegs fan.

Randolph Maris didn't seem to feel the same affection for his hometown team. Definitely a Yankees rooter, Mr. Maris has a well-known brother named Roger.

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

December 16, 1961

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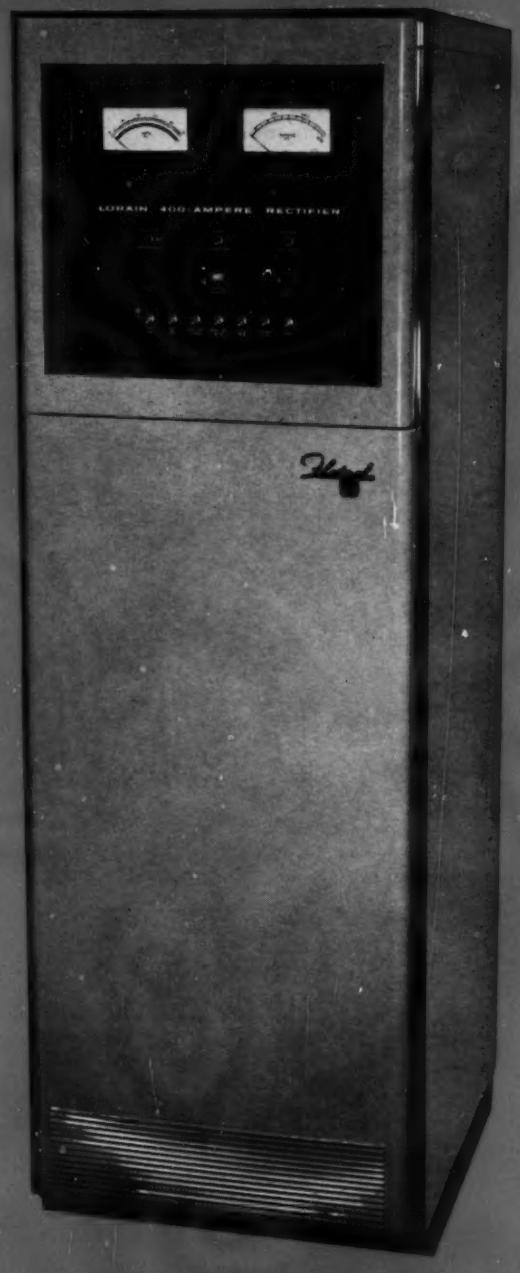

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2

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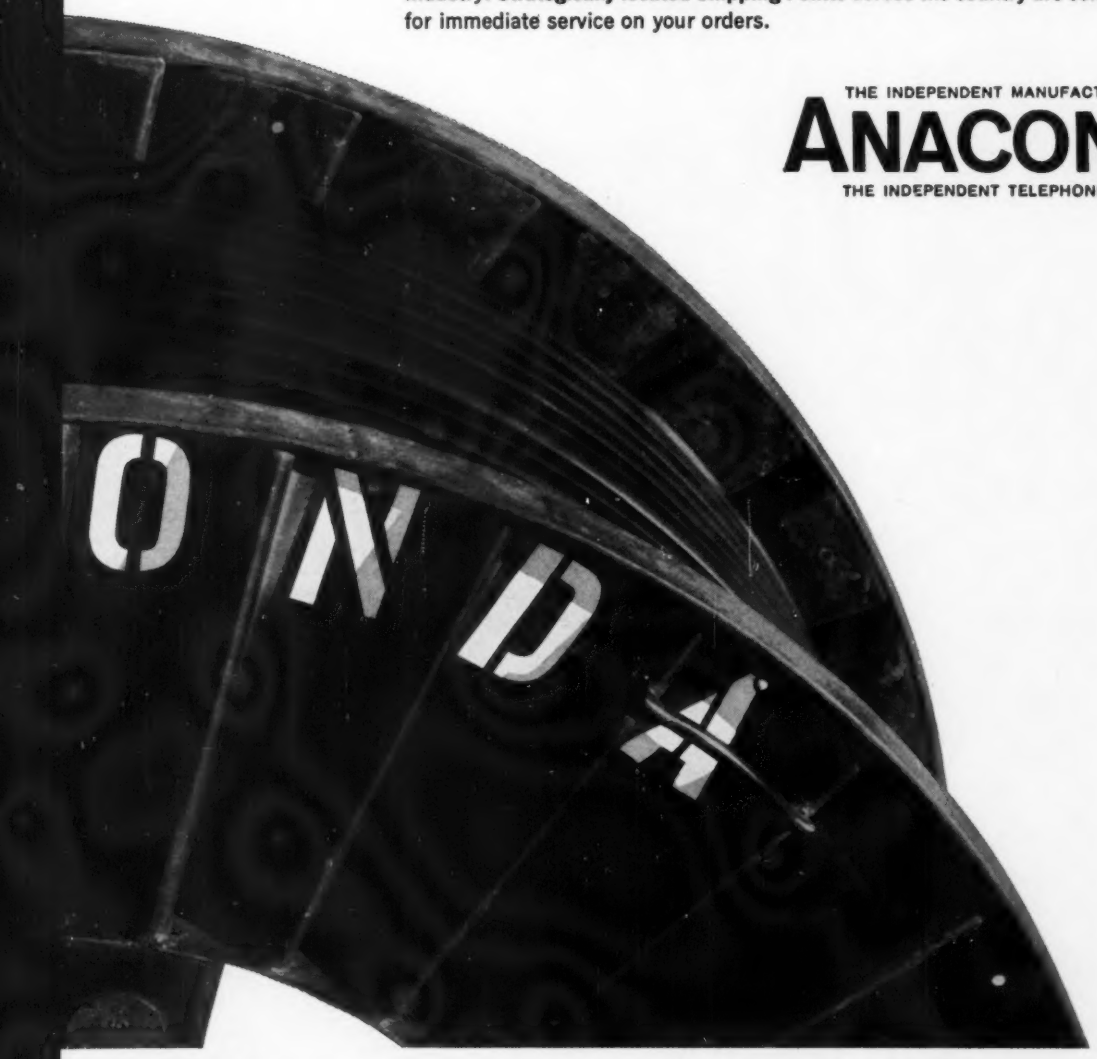

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
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Congressman criticizes reported plan calling for President Kennedy to take satellite communications planning away from the FCC . . . Upholds the commission as the only governmental agency qualified by experience to carry on the program . . . U. S. Chamber of Commerce joins the many supporters of private ownership of satellite system. Rundown of administration's future legislative proposals presented.

A STARTLING bit of information concerning satellite communications was brought to light by Rep. William L. Springer (R., Ill.), who has been in Congress since 1950. In a statement, issued Dec. 7, Springer reported as follows:

"Statements attributed to a high Kennedy administration official said it is very likely the President will seek to take the role of space communications planning away from the FCC by recommending legislation to Congress.

"If this is true, it is the purpose of the Space Council to supercede the FCC in the field of satellite communications. Such a position would change the entire policy on space satellite communications. The policy thus far has been to leave regulation of space communications with the FCC.

"The FCC was organized for the specific purpose of regulating communications, both domestic and international, including space. It has ample authority to do so and under present policy has been competently handling all matters in planning with reference to space communications.

"The FCC has been so acting since May, 1960.

"It is the only agency in the government presently qualified by experience to carry on the program in space communications. It is not in the public interest at this late date to substitute a new agency for the FCC.

"The Space Council should consider the questions on which it only is an expert; namely, physically getting the communications device into space. It should leave to the FCC the questions on which it (the FCC) is an expert, the planning and regulation of these devices as communications facilities."

Congressman Springer's remarks are interesting, and perhaps foreboding. Assuming his intelligence information about the Kennedy administration's plans for dumping FCC out of the space communications business is accurate, what would be the results? The National Aeronautics and Space Council, which originally recommended private ownership of the space satellite communications system, appears to have altered this view.

As readers of this department will recall, in our coverage of Sen. Russell B. Long's Small Business Sub-committee hearings (*In the Nation's Capital,* Nov. 18), Dr. E. C. Welsh, executive secretary of the National Aeronautics and Space Council, testified that his group was still evaluating the proposals of the FCC appointed *ad hoc* committee (composed of the various international carriers involved in satellite communications), and the results of this study would probably take the form of a recommendation to the President.

It is conceivable that the forthcoming strategy referred to by Congressman Springer blossomed from a Space Council recommendation. Aggressive competition for jurisdictional areas of responsibility is not uncommon in this town where many bureaucratic empires have been built at the taxpayers' expense.

As we reported in our coverage of Dr. Welsh's appearance before Senator Long's sub-committee, we sensed, reading between the lines of his testimony, that the Space Council has had some second thoughts about the *ad hoc* committee's recommendations and its own recommendation for private ownership of the system.

The alleged proposal which Representative Springer unearthed might also be the administration's answer to the bill which Senator Kerr said he will introduce in the next session.

Senator Kerr's bill (covered in this department in the Dec. 9 issue) would authorize private ownership of the space communications system. His plan calls for the creation of a Satellite Communications Corp. which would have 500 million dollars authorized capital stock, divided into 5,000 shares, which would be purchased by the companies participating in the plan.

Congressman Springer's observations about the alleged shuffling of the space communications deck seem to make a great deal of sense. FCC has been in the communications field for a good many years and unquestionably is better qualified by its depth of experience to regulate space communications (which are, after all, *communications)* than some Johnny-Come-Lately which might fumble the complex responsibilities entailed.

Whether the means of transmission of a communications message is by wire, radio wave or via a space satellite, the regulatory problems involved are similar and FCC is best equipped to handle them.

Chamber Backs Private Enterprise

On Dec. 8, the U. S. Chamber of Commerce added its voice to the many who hold that communications satellites should be owned and operated by

private industry. Private industry has conducted intensive research in this area and is prepared to set up an experimental satellite system, the chamber said, and can give the United States an operable system as fast, if not faster than could be achieved through government control.

Regulation of rates by the Federal Communications Commission, the chamber said, would assure the public of fair treatment. A group of communications companies, the chamber continued, have already stated that as soon as experimental work is completed, they will be eager and able to establish a commercial space communications system with private funds.

The chamber said that the communications companies have offered to reimburse the government for all charges for rockets and launching facilities used in the space system. It should be realized, the chamber said, that, actually, space communications is only an extension of the existing system of international communications and will supplement cable and radio services now in existence. These systems historically have been developed and provided solely by private industry and it is logical that this principle be continued in connection with space communications.

The national chamber pointed out that government ownership could result in space communications becoming entangled with international affairs of this country and this entanglement could lead to interminable delays and many further complications in establishing a world-wide satellite system.

Why Unions Have Stopped Growing

An interesting piece of labor literature which recently came to the attention of this writer is a pamphlet put out by the Center for the Study of Democratic Institutions, a Ford Foundation subsidiary which has always supported organized labor. That is what makes this brochure worthy of note, because its title is "The Decline of the Labor Movement."

The author of this little piece is none other than Solomon Barkin, long-time labor economist, who served for many years with the National Textile Workers Union. What Mr. Barkin is trying to say in his booklet is that the unions are becoming the victims of their own success. They have accomplished much of what they set out to do and hence there is a flagging incentive for new workers to join (and old workers to keep on paying dues?). As the classic old French poem put it:

"We will go no more to the woods,
"For the laurels have all been cut."

Mr. Barkin, staunch unionist that he is, actually seems to regret the "good old days" when there were sit-downs, and strike riots, and when social discontent, generally, rallied the workers to the union standard. But today we have a prosperous two-car society which moves the more ambitious union members more and more to middle-class ways of life; and middle-class viewpoints bringing a certain abatement in social discontent.

Perhaps this is oversimplification. Maybe there are other things which explain why Jimmy Hoffa's union is "on the make" and still growing, while the AFL-CIO is actually losing memberships, over-all. Secretary of Labor Goldberg suggested these other explanations, perhaps unconsciously, when he assured the recent labor meeting at Miami Beach that the government planned no wage controls under present circumstances. Voluntary wage restraints imposed by the unions themselves were working well so far, he said.

Union leaders impose those restraints because they know American wage costs are already two to three times as high as competitive costs in the West Europe common market. They are still higher than competitive costs in the Soviet areas. The American economy is increasingly under pressure from its friendly rivals in the Common Market and its implacable adversaries in the Soviet areas. The U. S. must meet those pressures cost for cost, in production volume and in productivity. Wise American union leaders know this will require continuing wage restraint, at least until European and Soviet costs rise closer to the American standards.

Obviously, the normal reason workingmen join unions is to increase their wages. It is not surprising if some of them feel that they can get all the wage restraint they need from management decisions (for which they do not have to make any dues payments). Unions are necessary, now as in the past, to keep those management decisions to a rule of reason. But the abrupt cut-off on earlier vistas of always rising wages may help explain why unions' growth is slower.

Legislative Plans Charted

Administration forces are utilizing the between sessions recess to regroup their forces, stock up on artillery and revise strategy for pushing through more of President Kennedy's legislative proposals. They're bound to be more effective in this round after a rather sound trouncing in the last session of Congress.

Here's a rundown on some of the things you can watch for:

As was indicated in this department previously, the space program will be beefed up with a substantial appropriation increase.

An attempt will be made to get a tax revamping bill through Congress, but your Washington columnist does not accord it much chance for success. Tax legislation is not popular during an election year. Some of the items expected to be in the Kennedy tax bundle are credits for industries making new capital investments, removal of tax preferences for investment in highly developed foreign countries, and tightening up many of the overseas "tax havens" of U. S. companies.

Military appropriations bills totaling about 51 billion dollars (including some 250 million dollars for the two new Army divisions of 14,500 men each which the President wants to establish to enable him to release the reservists and National Guardsmen who have been called to active duty because of the Berlin situation).

An extensive community fallout shelter plan is being devised. The shelters would be built in participation with the states.

Civil rights legislation, including the possibility of a Fair Employment Practices Commission (as outlined in the platform President Kennedy campaigned on) is in the offing.

Foreign aid will naturally enjoy a role of prominence with more money allocated for the American Alliance for Progress. Castro's blunt admissions about his long-standing status as a communist intensifies the need for an aggressive effort to prevent other Latin nations from falling into the Soviet orbit. President Kennedy, still smarting under the sobering-up he got with the Cuban invasion fiasco, must know that money alone will not preserve freedom in South America.

Part of the effort in this direction will be a request for more funds for the U. S. Information Agency.

Authorization will be sought for a 10-year oceanography program which might prove as dramatic and rewarding as space exploration in years hence.

Plans for federal aid to higher education, secondary education, and medical education will see action.

The Kennedy administration can be expected to push hard for new and expanded welfare programs including medical care for the aged, bigger public welfare programs, aid for families of migratory workers and funds for refugee settlement (notably Cubans). To handle the expanded work, the Department of Health, Education and Welfare wants more assistant secretaries.

Many administration and Capitol

(Continued on page 49)

STEP-BY-STEP

DIAL TRAFFIC ENGINEERING

By ELMER W. SLATER*

TELEPHONE CENTRAL offices are an essential and important part of the complex facilities network which makes possible the communication of one telephone subscriber with any other subscriber, wherever the called telephone may be located.

The size of a central office and, therefore, its cost (land, building, equipment, etc.) are dependent upon the amount of switching equipment installed to make available the trunking paths for local and toll calls, and this, in turn, is dependent upon only one thing, the volume of traffic which is to be handled.

If the central office components are in excess of the actual volume requirements, the excess represents money wastefully spent and from which there is no rate of return; conversely, if the central office is not adequate to fulfill the purpose for which it was designed, then difficulties arise in providing to the subscribers the service they are paying for.

Facts Essential

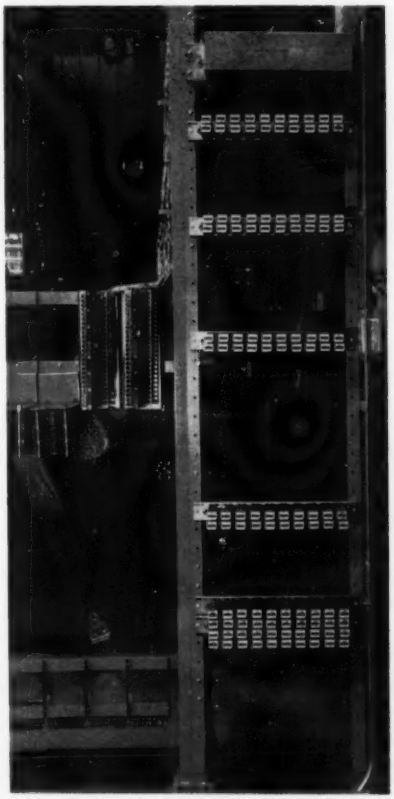
Facts, and not "guesstimating", should be the only basis for determining equipment requirements. Oftentimes stated as being, "The right amount of equipment, at the right place, at the right time," its application is essential if unjustifiable expenditures are to be curtailed.

There are three sources from which this type of factual information may be obtained:

(1) Reported visual observations of abnormal overloads and "All Switches Busy" conditions, by switchroom personnel. Memorandums of this nature should be treated as worthwhile "telltales" of potential trouble to be investigated. They would not be sufficient by themselves to warrant equipment additions, for the necessary information of "How much more should be added" is unknown.

(2) Traffic studies by qualified engineers, using equipment designed especially for this purpose.

(3) By having permanently-installed traffic registers, which are variously connected to indicate abnormal trends of traffic flow through a central office.



Typical traffic register bay. The 20 IPM interrupter for the linefinder dial tone delay relays is at the top of bay. Meter arrangement from top to bottom: Linefinder dial tone delay meters; linefinder pegcount meters; selector last trunk busy meters; miscellaneous pegcount meters, and connector lost call meters.

This article covers briefly the function of traffic registers, usually called traffic meters, as a means to provide operative data that will:

(1) Show growth trends.

(2) Indicate condition (traffic-wise) of the inter and intra-office trunk groups.

(3) Assist materially in correct line and normal assignments.

A traffic register is basically an electro-mechanical device, which, when operated, will indicate in an accumulative manner the number of times it has been actuated. Generally, the same type may be used for various functions, the purpose to which they are assigned, governing the terminology used in its designation, such as:

Originating pegcount meters.
Dial-tone-delay meters.
Last-trunk-busy meters.
All-trunk-busy meters.
Incoming selector pegcount meters.
Connector lost-call meters.

Originating Pegcount Traffic Registers

The originating pegcount traffic register, as the name implies, registers the number of calls originated to an office. They are preferably connected to each linefinder group, one meter being as-

*Mr. Slater is Dial Traffic Engineer of the General Telephone Co. of California, Santa Barbara, Cal.

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Issue 1

SMALLTOWN CENTRAL OFFICE

1300 Lines and 2400 Terminals

METER ASSIGNMENT SHEET

ORIGINATING PEGCOUNTS

METER	CONNECTS TO	NO. OF SWITCHES
1	1A C.B.	10
2	2A F.R.	18
3	2B F.R.	18
4	2C F.R.	18
5	2D F.R.	18
6	2E F.R.	18
7	3A F.R.	18

MISCELLANEOUS P.C. (INCOMING)

METER	BAY	SHELF	TRUNK GROUP	TOO NO.	TRUNKS
1	301	K	Woodtown-2 to SMA VIA	X-1111	40
2	301	L	" "		
3	302	K	" "		
4	302	L	" "		
5	301	M	Woodtown TOLL & I.T. to SMA	X-1112	20
6	301	M	"		

Page 2
Issue 1

SMALLTOWN CENTRAL OFFICE

(1ST) 3RD SELECTOR LAST TRUNK BUSY METER ASSIGNMENTS

METER	SUB GRP	LEV	BAY	SHELF	TRUNK GROUP	LEVEL ROUTE	TRUNKING
1	1	1	301	AB-EF KL-O	SMA-4 to SMA-4	11/3rds	118-5
			302	AB-E KL			
2	1	2	301	AB-CD	To 42000	5ths	80-18
			302	AB-CD			
3	2	2	301	EF KL-O	To 42000	5ths	88-27
			302	E &KL			
4	1	3	301	AB-CD	To 43000	5ths	80-18
			302	AB-CD			
5	2	3	301	EF KL-O	To 43000	5ths	88-27
			302	E &KL			
6	1	4	301	AB-CD	To 44000	5ths	80-10
			302	AB-CD			
7	2	4	301	EF KL-O	To 44000	5ths	88-15
			302	E &KL			
8	1	6	301	AB-CD	SMA-4 to WOO-2	96/3rds	80-41
			302	AB-CD			
9	2	6	301	EF-O	SMA-4 to WOO-2	96/3rds	38-20
			302	E		Total	61
10	1	0	301	AB-EF	SMA-4 to Woodtown Toll & DSA "O"		108-16
			302	AB-E			
11	2	0	301	0	SMA-4 to Woodtown Toll & DSA "O" CB		10- 5

Examples of meter assignment record sheets. The function and group connection of each meter is accurately and concisely detailed.

signed to service Linefinder 1-A, 1-B, etc., whether there be one or two shelves per group. Where there is a mixture of originating types of equipment, such as linefinders and lineswitches (rotary or plunger), it may be desirable to connect to local 1st selector shelves; however, there are two real advantages gained by using linefinders where possible:

(1) Pegcount meters assigned to linefinder groups can be used to count not only the number of originating calls, but also to indicate the traffic load to each individual linefinder board.

The method used to obtain this load value is as follows:

Assume an office busy hour load to be 679 unit calls, each of 100 seconds duration, commonly called CCS. Assume number of daily calls to the office to be 5350; dividing the daily calls into the office busy hour CCS load, we get a "bit" factor for each call of .127.

Also, if the average holding time per call is 121 seconds, and the percentage of the busy hour calls to the daily calls is 10.5, by multiplying these values, divided by 100, we derive the same "bit" factor of .127. To get the CCS load of the linefinder board, we simply multiply this factor .127 times the number of daily (24-hour) calls handled by this linefinder. Assume Linefinder 1-A to have 1,120 daily calls; 1120 x .127 = 142 unit calls, or 142 CCS would be the load to this board.

(2) Linefinder originating pegcount readings tend to be more accurate. The linefinder is seized and actuated by merely lifting handset off the hookswitch, but a 1st selector, although it is seized, is not actuated until the pulses are dialed. In addition, the 1st selector release relays must be carefully adjusted in order to get an accurate count.

For these two reasons, the difference between the total linefinder pegcounts versus 1st selector pegcounts may amount to as much as 5 or 6 percent of the total originated calls. Where toll settlement charges are based on total number of calls handled, this may be an important loss factor.

Growth trends of an office can be shown by recording, by month and year, the average number of daily calls. This is an especially valuable tool if, on the same graph, a monthly record of the total number of installed stations is also noted.

Dial-Tone-Delay Meters

Dial-tone-delay meters are arranged to give a count when, through a completed series (ground) circuit of the "A" shelf and "B" shelf—"B" Relays, all the linefinder switches on both the "A" and "B" shelves are busy. Operated by a 20 IPM motor, a continuous search once every three seconds is being made for the ground which is present only when an all-switches-busy condition exists.

A commonly used linefinder capacity table is the 1.5 percent dial tone delay, which means the percentage of calls (in this case 1.5 percent) in which the dial tone is delayed three seconds or longer. In other words, if not more than three calls in every 200 calls have a delay in getting dial tone of three seconds or longer, the grade of service is judged to be satisfactory.

As stated, the linefinder all-switches-busy lead is examined for ground 20 times a minute, or 1,200 times per hour. If we got 18 registrations in the busy hour, we would have $18 \div 1200 = .015$, or in percentage, 1.5 percent dial tone delay over three seconds. To adjust for any errors, the percentage may be reduced to 1 percent, or 12 registrations per hour. Assuming 12 busy hours per week, we arrive at $12 \times 12 = 144$ registrations per week for each linefinder group.

Under this condition, less than 144 registrations per week may be assumed to indicate the call-carrying capacity of the linefinder board has not been exceeded by the permissible limits, and more than 144 registrations per week would indicate a possibility of overload. No accurate determination of the actual CCS load can be based on the number of dial-tone-delay registrations, so this method must be looked upon as only a warning device of a probable overload condition which should be investigated in more detail. Overloads on particular linefinder boards can be taken care of by a reduction in the number of working lines

assigned to the overloaded board, and placing them in a more lightly-loaded group.

Fortunately, this change can be accomplished easily and without involving a number change to subscribers. Only one dial-tone-delay meter per linefinder group is required. All trunk-busy meters, separately assigned to Shelf "A" and Shelf "B", are not necessary and only serve to increase installation and maintenance costs.

Last-Trunk-Busy Meters

Generally, this type of traffic register will be connected to the various subgroups off the levels of the 1st and 2nd selectors, and, as the name implies, they are connected to the last trunk of the subgroup. In theory, the last trunk will not be seized until the other trunks have been "used up," therefore, the usage of the last trunk is an indication of the traffic which is being carried by the subgroup. Trunk adjustment tables are available for all the various standard gradings, utilizing the average weekly total of registrations for each group metered.

For example, assume a trunking pattern of 80 selectors to 23 trunks, with a weekly average count on last-trunk-busy meter assigned to this group of 37 registrations. This indication applied directly to the 80-23 selector table would show a requirement for one additional trunk. If, however, the known average holding time per call in seconds differs from the 180 seconds used in the table, this should be taken into account.

Assume the known holding time to be 135 seconds, then $\frac{135}{180} = .75$, and this factor applied for correction to the weekly registrations would become $.75 \times 37 = 28$. This number of registrations, applied to the table, shows no changes required, either upward or downward, in the number of trunks for this particular subgroup. Last-trunk-busy traffic register readings, carefully administered, will be found an effective method of trunk administration.

All-Trunk-Busy Meters

This method of obtaining indications of traffic loads in any specified trunk group depends upon a chain "In and Out" circuit contact being made through each operated switch, the chain or series circuit being completed and pegging the meter only when all the switches in the group are busy.

This type of metering is used only for trunk repeaters and rotary outgoing trunk secondaries when other methods are not applicable. As in the case of last-trunk-busy readings, the weekly total registrations are applied (with correcting factor) to the appropriate table for trunk adjustments.

Incoming Selector Pegcount Meters

Pegcount meters connected to an incoming selector shelf ("PCM" pegcount meter pin on shelf terminal block) will register on the release of any seized (off normal) switch on the shelf. The CCS load on the incoming trunk group is calculated in the same manner as the originating linefinder pegcount meters, that is, by multiplying the average number of daily calls by the per-call "Bit Factor" established by detailed traffic studies.

The unit number of 100 call seconds, or CCS, is applied to the required grade of service table (determined by the class of service being rendered, that is, toll or local) and the number of trunks will be indicated. For example, an average number of daily calls of 1,225, multiplied by the factor of .122, gives 149 CCS, which, on the table of .01, or one lost call in 100 calls, shows 10 trunks required.

When using shelf pegcount meters to calculate trunk requirements, it is necessary that the various trunk groups be segregated so no "mixing" of the different trunk groups occurs on the

SMALLTOWN CENTRAL OFFICE
Cross-Connection Sheet For
Linefinder Pegcount Metering

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GROUP	L.F. P.C. Trunks V.T.I.D.F. Block	L.F. P.C. Trunks V.T.I.D.F. Pin	L.F. P.C. Meter Trk. H.T.I.D.F Block	L.F. P.C. Meter Trk. H.T.I.D.F Pin	Traffic Reg. Bay	L. F. P. C. Meter No.
1A C.B.	2-R	2 & 4	B-1	1	11201	1
2A		10 & 12		2		2
2B		14 & 16		3		3
2C		18 & 20		4		4
2D		22 & 24		5		5
2E		26 & 28		6		6
3A	2-R	30 & 32	B-1	7	11201	7

Linefinder pegcount metering.

SMALLTOWN CENTRAL OFFICE
Cross-Connection Sheet For
Linefinder Dial Tone Delay Metering

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LFDR	GROUP	L.F. ATB Trunks V.T.I.D.F. Block	L.F. ATB Trunks V.T.I.D.F. Pin	L.F. Meter Trunks H.T.I.D.F. Block	L.F. Meter Trunks H.T.I.D.F. Pin	Traffic Reg. Bay	D. T. D Meter No. #
1A C.B.	A	2-R	1	B-1	1	11201	1A
2A	A&B		9		5		2A
2B			13		7		2B
2C			17		9		2C
2D			21		11		2D
2E			25		13		2E
3A	A&B	2-R	29	B-1	15	11201	3A

Linefinder dial tone delay metering.

SMALLTOWN CENTRAL OFFICE
Cross-Connection Sheet For
Incoming Selector Shelf Pegcount Metering

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March, 1961

BAY	SHELF	Inc. Sel P.C. Block V.T.I.D.F. Block	Inc. Sel P.C. Block V.T.I.D.F. Pin	Misc. Meter Block H.T.I.D.F. Block	Misc. Meter Block H.T.I.D.F. Pin	Traffic Reg. Bay	Misc. Meter No.
301	K	2-F	21 & 22	D-1	1	11201	1
301	L		23 & 24		2		2
302	K		53 & 54		3		3
302	L		55 & 56		4		4
301	M		25 & 26		5		5
301	N	2-F	27 & 28	D-1	6	11201	6

Incoming selector shelf pegcount metering.

SMALLTOWN CENTRAL OFFICE
Cross-Connection Sheet For
(1st) 3rd Selector Last Trunk Busy Meters

Page 4
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March, 1961

LTD Jumper "C" Lead Bay	Shelf	Level	On OTA Ckt	LTB Trunk Circuits V.T.I.D.F. Block	LTB Trunk Circuits V.T.I.D.F. Pin	LTB Meter Circuits H.T.I.D.F Block	LTB Meter Circuits H.T.I.D.F Pin	Traffic Reg. Bay	Sel LTB Meter No.
301	B	1	1	2-L	1	G-1	1	11201	1
301	B	2	2		2		2		2
301	F	2	3		3		3		3
301	B	3	4		4		4		4
301	F	3	5		5		5		5
301	B	4	6		6		6		6
301	F	4	7		7		7		7
301	B	6	8		8		8		8
301	F	6	9		9		9		9
301	0	0	10	2-L	10	G-1	10	11201	10

Third selector last trunk busy meters.

Examples of cross-connection sheets for use by central office equipment installers.

shelf. Selector shelves being pegcounted are now designed to permit a 10-switch shelf to be split 5 and 5, in which case, two different trunk groups may be metered per shelf, using a separate meter for each five switches.

Connector Lost-Call Meters

With the exception of rotary trunk boards (level hunting), the ordinary flat-rate extended normals will normally be handled by less than the 10-switch capacity of the connector shelf, usually seven connectors. Under this condition of less than 10 switches per shelf, the 10th, or last trunk, from the 3rd selector ranks can be used for a connector lost-call meter. The action is as follows:

When all (say seven) connector switches are busy, and another call comes in, the last trunk is seized, causing a tip and ring short across the 10th trunk by the wiper contacts, operating the "A" and "B" relays in the vacant level and vacant line-terminating bridge circuit, which acts to send back an "all-trunks-busy tone" to the calling party and cause the connector lost-call meter to register this call. The total number of registrations, using a four-week total, is directly applied to the appropriate connector lost-call table to obtain, based on the number of calls uncompleted at the connector board, the number of switches required.

The question of equipping rotary trunk boards, which normally occupy per unit of 100 normals, more than one shelf of connector switches, with the connector lost-call feature, is debatable, as the using of the last trunk necessitates a change in the standard trunking pattern in the 3rd selector trunking. Generally, it could be said that it is not required because good engineering practice would provide a sufficient number of switches to handle this type of service, in which it is customary to limit the PBX and PABX rotary trunk boards to 65 per cent fill.

In the case of overloaded connector boards, two methods of adjustment are available:

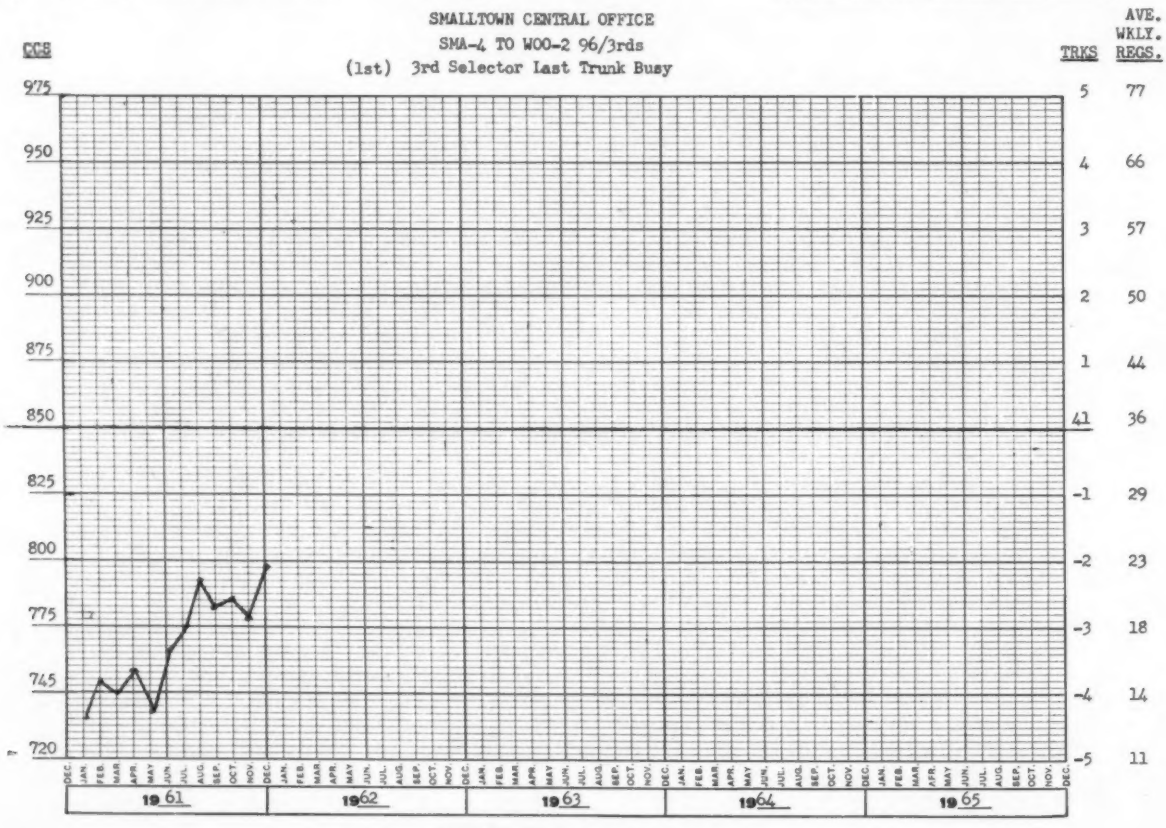
(1) Reduce the number of assigned normals.

(2) Add an additional connector switch.

Reduction of normals would require a number change to subscribers, unless the reduction be limited only to those normals which, over a period of time, are released from service at the subscriber's request (disconnects). If this method is used, great care must be taken not to reassign any such released numbers back in this particular "blocked-out" board.

Generally, it will be found to be more advantageous to add an additional switch, for this will increase the call-carrying capacity of the connector board, and automatically improve the grade of service with no disturbance to presently-assigned subscribers. An added advantage is that additional normal assignments may be gained.

For example, on a seven-switch connector board, assume the permissible load to be 84 CCS, and the calculated load (by connector lost-call readings) or the measured load (by traffic study), to be 97 CCS. With 88 working normals (test line not counted), the load per normal would be $\frac{97}{88} = 1.10$ CCS. Without a switch addition to maintain proper service grades, the number of



Use of a graph to record monthly readings saves time and shows a clear picture of trunk group condition. Growth trends are readily apparent.

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MEMORANDUM

Central Office_____ Date_____

To: T. L. Fone, Equipment Engineer

Subject: Subscriber Service Observation

We have observed on this date_____1961

at_____ AM / PM an

- ☐ Overload
- ☐ All Paths Busy
- ☐ All Switches Busy

_____ condition

on Trunk Group_____Bay_____Shelf_____

Additional Comments

_____

_____

Observation made by_____Forwarded by_____

A form that will aid and encourage switchroom personnel to report visual indications of potential trouble spots.

working normals would be limited to $\frac{84}{1.10} = 76$, requiring an 88.76 = 12 normal reduction.

If however, the connector board switches be increased from seven to eight, the permissible load would be 105 CCS. The number of normals now permitted would be $\frac{105}{1.10} = 95$, with a resultant gain of 95 — 88 = 7 normals. At 95 per cent fill for non-rotary types of service, this board may now be considered to be in an excellent "balanced" condition.

Responsibilities

Should all the various trunking paths be metered, then the essential traffic load indications and pertinent information relative to each trunking path will be available—originating pegcount and dial-tone-delay meters for the originating equipment; connector lost calls for the terminating equipment, and last-trunk-busy registers for subgroup trunking between the intra-office ranks of the 1st, 2nd and 3rd selectors; miscellaneous incoming trunk groups being handled by the incoming selector pegcounters.

Setting up the central office metering network is invariably a function of the dial traffic engineer and falls into four main divisions:

Division 1. The preparation of the meter cross-connect sheets, which will show the jumper cross-connections from the point to be metered to associated meter on meter bay.

Division 2. The preparation of meter assignment record sheets, which show purpose of meter and other information, which, in the case of a last-trunk busy assignment, would cover the sub-group nomenclature, the bay number, the subgroup number and the subgroup trunking. Readings from any meter which does not have the correct information of the group to which it is connected are of course, meaningless.

Division 3. The preparation of a simple, concise meter reading sheet, which will show the meter number and the date and how it should be read. Generally, the switchroom personnel will be responsible for obtaining and noting on this form the meter readings desired.

Division 4. The final preparation of the reports in the form of actual trunk requirements derived from calculations based on readings recorded on meter reading sheet.

The actual installation and cross-connections of the meters should be done by the central office equipment installers. Such work should be carefully checked upon completion by the traffic engineer, who must, at all times, be sure of correct meter assignments in a central office.

Sometimes difficulties may arise in obtaining the readings on time, particularly if some of the central offices should be unattended or partially attended. It will be found, however, that chief switchmen and central office foremen are keenly interested in the traffic operating characteristics of their offices and will be most cooperative in obtaining this data.

Summing up, there is a growing realization of the importance of accurate traffic register readings for the following reasons:

(1) The need to assure public utilities commissions that standard service grades are being rendered, or provisions are being made to render service to meet the requirements of subscribers.

(2) The need for close examination of switch quantities (especially excessive over-trunking) in order that expenditures will be made only where and when justified by engineering analysis.

These two factors are largely determined by the meter readings outlined and by regular routine traffic studies.

It will be evident that each meter (with the exception of the dial-tone-delay meters) is being fundamentally used as a pegcount meter, registering all calls, as in the case of a line-finder board pegcount meter, or just

(continued on page 53)

BODY BY FISHER ROOMINESS

is another reason Chevrolet does better by your fleet dollars

[*right up through trade-in time*]

★★★★★★★★★★★★★★★★★★★★

This new Chevrolet gives you the man-sized, down-to-business roominess you want in a fleet car. In fact, Chevrolet went to the extent of using lifelike models to make certain all its '62 models have space to spare, wherever it counts, for relaxing comfort. That goes for head room, leg room, foot room—the works. Those big wide-opening doors are another Body by Fisher advantage for busy fleet schedules. And what Chevrolet does for people, it does for luggage. Nobody else in Chevrolet's field gives you a trunk like this one, with bumper-level loading plus a deep-well floor that lets you take aboard odd-shaped objects other cars just can't accommodate. Add to this all the traditional Body by Fisher advantages—its rugged durability, handsome hardy interiors, through and through insulation against road noise and weather—and you have some of the best reasons why Chevrolet keeps its value longer to bring top trade-in year after year. . . . Chevrolet Division of General Motors, Detroit 2, Mich.

Low-sill trunk design takes lift out of loading. Extra-wide lid allows easy loading from the side.

Foam-cushioned front seat, front arm rests, dual sun visors, cigarette lighter and glove box lock are standard on all '62 Chevrolet models.

'62 CHEVROLET

CHEVROLET

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- Short and Long Hop
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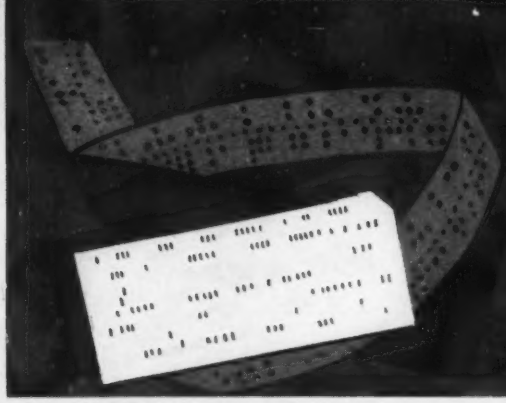

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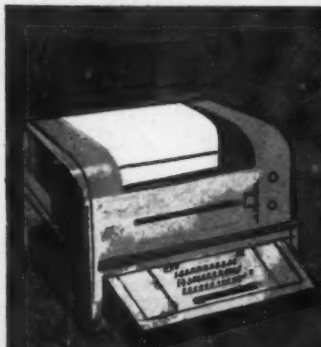
- Quaternary FM to 3360 bits per second
- Transistorized



CARRIER TELEGRAPH SYSTEMS
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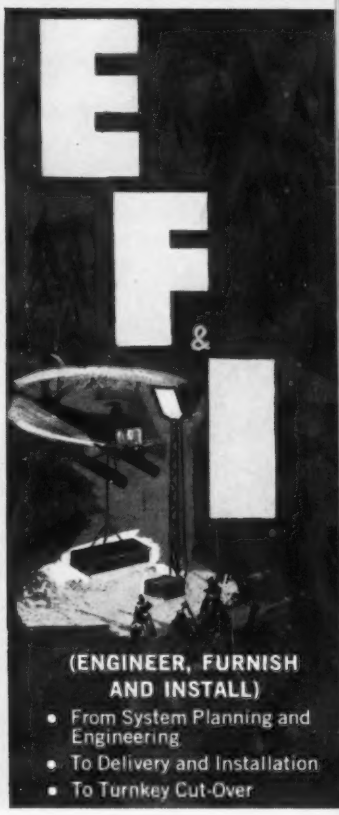

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- From System Planning and Engineering
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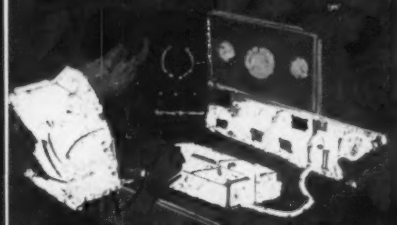
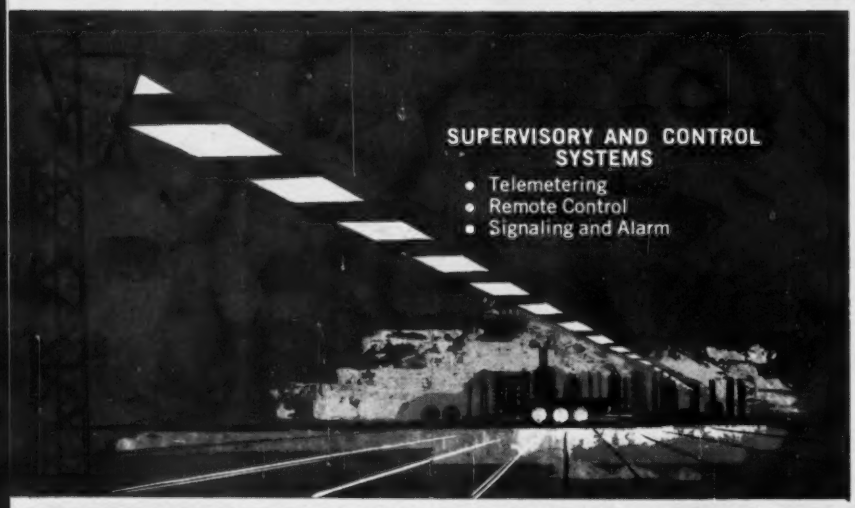
SYSTEMS AND SERVICES



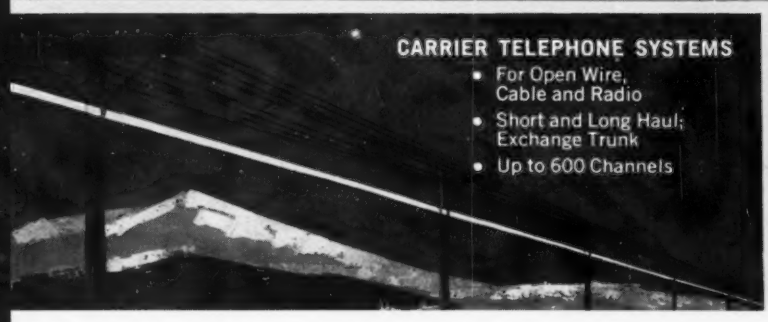
REPAIR/REPLACEMENT
- 24-hour Service
- Full stock of Reserve Units
- Customer Replacement Service

TECHNICAL LITERATURE
- Equipment Drawings and Specifications
- Customer Information Service
- Monthly Technical Supplements

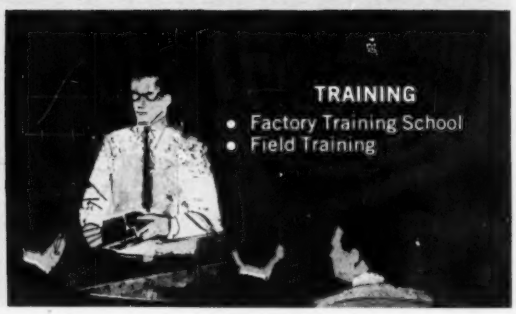
MOBILE TELEPHONE SYSTEMS
- Manual and Dial
- Mobile and Urban stationary installations
- 35 mc., 150 mc. and 450 mc.



SUPERVISORY AND CONTROL SYSTEMS
- Telemetering
- Remote Control
- Signaling and Alarm



CARRIER TELEPHONE SYSTEMS
- For Open Wire, Cable and Radio
- Short and Long Haul; Exchange Trunk
- Up to 600 Channels



TRAINING
- Factory Training School
- Field Training

from start to finish, is entirely ours.

Or, if you wish to undertake your own installations, you'll find that there is no need to go beyond Lenkurt Electric as the source for the transmission equipment you need. If it is used by a telephone company, we have it.

LENKURT ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

Minneapolis, New York and San Carlos. — Specialists in VIDEO, VOICE and DATA TRANSMISSION —

SERVING TEXAS' FASTEST GROWING CITY

BY RICHARD L. POST*

PART 3. Part 2 appeared in the Dec. 9 issue, Part 1 in Dec. 2.

IT WAS the end of June, 1960, when the WATCH IRVING PROGRESS theme—the first phase of an intensive advertising and public relations program—was to be concluded in Irving, Tex.

It was time for The Southwestern States Telephone Co. to launch the second phase of the program.

The theme for July through October would be GROWING WITH IRVING, incorporating similar design principles and using the telephone dial—but this time, with the company emblem in the dial.

By directly connecting the company to the same design idea and similar theme used in the first phase, the advertising campaign was to have continuity and even more effectiveness.

Expand Campaign

Again, various types of outdoor advertising were employed: vehicle posters, 24-sheet poster billboards, the painted bulletin billboard on the expressway, and posters on T-frames at outside plant construction sites—all with the same design.

Newspaper ads with similar design followed in the *Irving News*.

The first bill enclosure set the stage for the new theme. Sent with July bills, the insert used the same new theme design and GROWING WITH IRVING headline. Conversational talk-it-over copy followed:

> One thing's for certain—Irving isn't going to stop at 45,489, or anywhere near it.
>
> The last forecast we heard put our 1980 Irving population at 110,000! That's just 20 years from now, not a very long time at all. But nothing is impossible when you consider what has happened in the last 10 years.

Would you have forecast anything like Irving's present size if you had been asked, back in 1950? Not many would. But now that the proof of what this city can do is a matter of record, there's hardly any limit to what we will believe about the future.

Growth is a challenge to faith. In any business, it takes continued investment—well in advance—to keep pace with a fast-growing community. Sizeable amounts of cash hang in the balance while the businessman decides, "Will it grow that much, or won't it?" This is particularly true in the telephone business, where forecasting is vitally important.

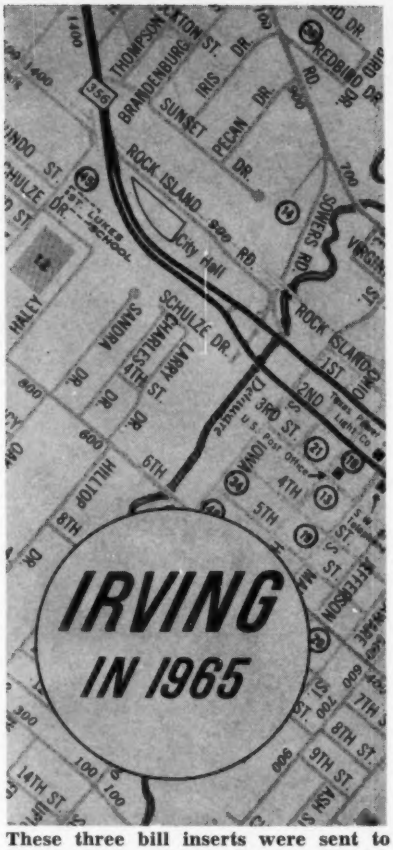
Our decision is made. Our money is on the line, committed all the way through 1962. Preliminary budgets reach nearly five years beyond that.

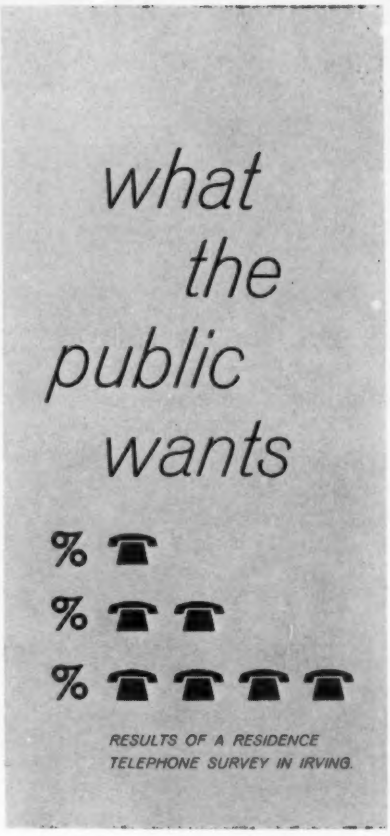
Just between the beginning of this year and the end of 1962, Southwestern States will invest more than *4.4 million* dollars to modernize and expand your telephone system, and to pave the way for future growth. That's roughly $300 for every telephone now in service in Irving. Of this total investment, 1.9 million dollars will have been used to purchase and install new telephone facilities by the end of 1960; 2.5 million dollars more will follow during 1961 and 1962.

*Mr. Post is Public Relations Director of Southwestern States Telephone Co., Brownwood, Tex.

Southwestern States truck with adhesive-backed poster passes a painted and lighted bulletin billboard, showing tie-in of the company's advertising with identical theme.

GROWING
WITH IRVING!
ONE thing's for certain — Irving isn't going to stop at 45,489, or anywhere near it.
The last forecast we heard put our 1980 Irving population at 110,000! That's just twenty years from now, not a very long time at all. But nothing is impossible when you consider what has happened in the last ten years.
Would you have forecast anything like





These three bill inserts were sent to Irving subscribers in alternate months in 1960; left in July; center in August, and right in October.

By anybody's standards, 4.4 million dollars in three years is a big investment. It equals the total evaluation of telephone plant facilities in Irving at the end of 1959. Dollar-wise, your telephone system will have doubled in value in just 36 months.

By the end of 1960, we will have in operation a completely new BLackburn-5 exchange and a greatly enlarged BLackburn-2, -3, -4 exchange. Engineered into the buildings and equipment at these two exchanges will be a vast capacity for growth.

Yet, from where we now stand in July, that goal begins to look like just the beginning. We're confident Irving will continue to grow—and we're determined to be ready for it.

Very truly yours,
W. P. Esslinger
Division Manager
Irving, Tex.

At the close of this insert, the facts booklet giving dates and details of Irving telephone expansion was again offered free for the asking.

"Census" Report

Since the May bill insert had described the telephone "census" of Irving, it was decided to tell of the findings of the survey in the August bill insert. The attractive cover showed a street map with the heading "Irving in 1965".

The copy read:

Three months ago we reported to you on a special Irving "census" being conducted by your telephone company. At that time, everyone was talking about the national census. They still are. For, as you know, Irving turned out to be the fastest growing city in Texas.

Our census was almost as dramatic.

We counted houses and business establishments instead of people. We counted vacant lots. In fact, our census-takers made a record of practically every square foot of Irving. We were looking for the main sources of the city's future growth—and future telephone demand.

We consulted major builders in the area. Reviewed the city's Comprehensive Development Plans. Checked your business and residential zoning maps against our own telephone cable charts.

We discovered that on June 1, 1960, there were 13,299 residential establishments, 820 commercial establishments, and 30 apartment buildings containing 344 apartment units within the Irving telephone service area. Telephones numbered 14,614.

Our next step was to project these figures. The results are now in. They amount to a forecast of Irving in 1965. In five years, you can expect a population of 78,900.

By then, telephones will have practically doubled to a total of 27,783—an increase of 13,169 over mid-1960. The major share of this increase, 8,080, will come from the new BLackburn-5 area to the north.

While the expected totals make interesting reading, by far the most important feature of the study is the way it virtually pin-points the *areas where growth will take place.*

Our engineers are already at work

(Continued on page 36)

Sooners Focus On

• Partnership
• PR
• Politics

By DIANNE P. DRUCKER

BOTH BELL AND Independent industry speakers at the Oklahoma Telephone Association's convention placed emphasis on three points: The importance of cooperation between all companies; the necessity for good public relations; and the need for all telephone companies to take an interest in politics and government.

Both Jack Keith of Southwestern Bell Telephone Co. and Harold R. Bollinger of Waconia, Minn., vice president of the United States Independent Telephone Association, hammered home these considerations in their talks before the Oklahoma group which met on Nov. 8 and 9 in Oklahoma City.

Harrold R. Peterson of Roosevelt presided at the two-day session which had an attendance of 325.

Mr. Keith, Oklahoma general commercial manager for Southwestern Bell, warned that "the way things are going nowadays, there is not a moment in time—not one—when Independent and Bell System forces may not be called to act together with the one over-riding purpose of saving the nation through instantaneous, integrated, modern communications."

He stressed that better service in any one location ultimately means better service for the total telephone system of the nation.

The teamwork needed to provide this better service is a practical day-to-day job, Mr. Keith said. It starts, he stated, with an attitude of mind and a desire to keep pace with progress. He continued:

"In the Bell System we believe—and I hope you do, too—that in the coming years, the greatest benefits to the public, and the greatest advantages to the companies will come from consideration of how any change or new method affecting joint operation can best be made to function in the interest of the whole public which the whole industry serves. We want that to be the starting point of our basic thinking, and we intend to keep that view in our consultations with you. . .

"And speaking of consultations, I can't see any other prospect than that they will have to grow in frequency and broaden in scope."

Mr. Keith pointed out that the continuing stream of improvements and changes in service indicate why consultations are so important. But, he said, technology alone will not solve all the problems of the future. . . .

"If we're going to answer more needs," he emphasized, "first we shall have to answer some questions—questions like these:

"How broad is the market? How fast shall we build for it? How much investment will be needed? How do we best promote and sell the service?

"And over and over again—as we grow, and as our risks increase, how do we make sure that we grow at a profit?"

Going hand-in-hand with these questions was another posed by Mr. Keith: "How do we maintain and improve our public relations standing in the community?"

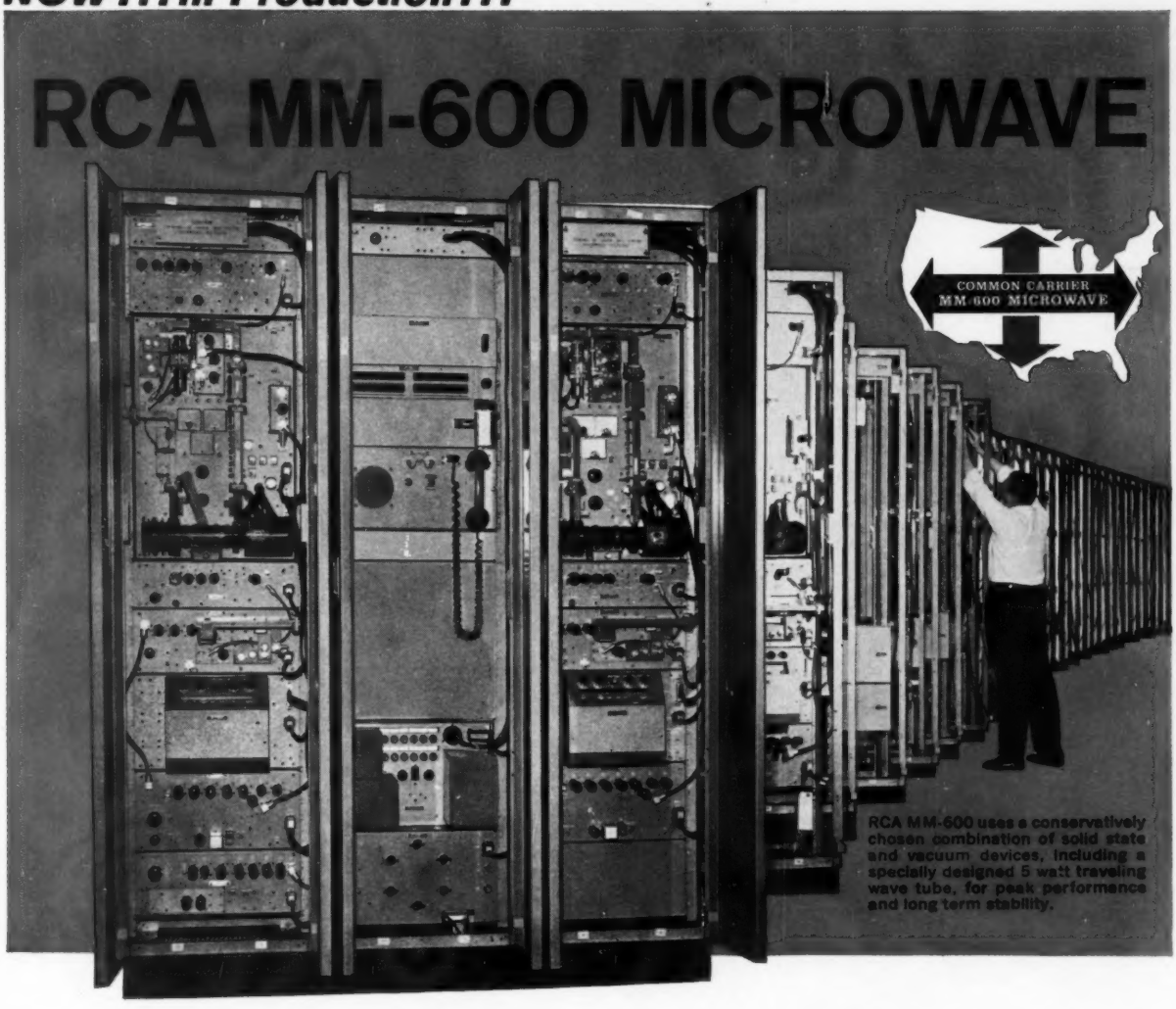
He told the Independents that they need to realize their dependence on the public and to cultivate the public's understanding of their problems, because, he said: "In the long run, the public—through its elected representatives—will have final approval on your actions.

"I think it behooves us," he stated, "as members of the American business system, and particularly as represen-

Officers and directors of the Oklahoma association take a break from convention business to pose for this picture. Left to right are: R. E. Harris of Purcell; R. E. Messecar of Broken Arrow; H. R. Peterson of Roosevelt, retiring president; Truman Wood of Kingfisher, first vice president; A L. McFadden of Ringwood; Jack Holt of Stilwell, president; L. A. Guest of Davenport; Jack Keith of Oklahoma City; A. A. Schultz of Oklahoma City, treasurer; Hugh Straughn of Oklahoma City, secretary, and O. H. Mullen of Inola, second vice president. J. R. Hollis of Hinton was not present when this picture was taken.

NOW . . . in Production . . .

RCA MM-600 MICROWAVE


COMMON CARRIER
MM-600 MICROWAVE
RCA MM-600 uses a conservatively chosen combination of solid state and vacuum devices, including a specially designed 5 watt traveling wave tube, for peak performance and long term stability.

Off the production line and ready for shipment . . . the new RCA MM-600 Microwave Relay equipment is specifically designed to meet the exacting performance requirements of the Common Carrier Service. The MM-600 provides the reliability you require today, plus the long haul capability and economical channel expansion necessary to meet future requirements.

Operating in the microwave band of 5925-6425 mc, the MM-600 carries in excess of 600 voice channels, or NTSC color television signals, for distances of 3,000 miles or more. The MM-600 meets the CCIR/CCITT performance standards for intermediate telephone and TV services. A controlled baseband spectrum up to 10 megacycles is available for any desired application.

Write now for additional MM-600 information, or request an RCA Microwave Specialist to arrange a meeting with you at your convenience. Take a step toward your communications future—return the coupon today.

RCA

The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

RADIO CORPORATION OF AMERICA
Microwave Equipment, Dept. CC-189
Building 15-5, Camden 2, N.J.

☐ Please send me further information on RCA MM-600.
☐ Have an RCA Microwave Specialist contact me.

NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____

tatives of a regulated industry, to take more interest in politics and government.

"Politics is not something that happens in Oklahoma City or in Washington, D.C. Politics begins in your home town, in your precinct, in the county and state governments. You ought to keep abreast of the state legislature and know about bills that are introduced affecting your industry. Then, you ought to talk to your elected representatives and senators about them.

"Only by this type of continuing vigilance can we protect our industry from punitive and restrictive laws and maintain our right to operate as a free, private enterprise. . ."

Voicing the same concern, Harold R. Bollinger, USITA's representative at the meeting, said: "I regard the many challenges to the free enterprise system as more serious and more dangerous than many people seem to realize, and I think it is time that each and every one of us should start doing something about it.

"In my opinion no one is better equipped to preach the gospel of free enterprise than the Independent telephone industry."

Mr. Bollinger declared that past accomplishments of the telephone industry were contributed to by cooperative efforts of state and national telephone associations. He urged all Oklahoma companies to join the USITA and to contribute time and effort to it.

"The more you do for, and contribute to, your state and national associations, the more your associations can accomplish for you," he stressed.

He pointed out that new emphasis on the value of communication services has attracted others to the field, and for the first time telephone companies are facing competition.

To combat this, the communications industry must offer quality service at competitive costs, and do this, he said, "while maintaining a good income statement and a good balance sheet."

The first step in service improvement, Mr. Bollinger continued, was the mechanization of local service. Strides have also been made, he stated, in mechanizing toll service.

"In this latter program," Bollinger emphasized, "The cooperation and understanding of every telephone company is essential if all companies are to receive their fair share of toll revenues and at the same time offer this service to the public at fair and competitive prices. This requires fewer toll centers spaced farther apart, and more EAS service which would eliminate many short-haul toll calls now being handled at a loss to the industry. Your USITA is standing guard to see that your interests are being protected. As

Representing the United States Independent Telephone Association at the Oklahoma convention, H. R. Bollinger, vice president, spoke on "Vital Factors in our Business."

you expand your facilities to accomodate this program, you will want and need the help of your state and national associations. . . It is a fact that each of us must be concerned with the financial soundness of our entire industry, because we Independents cannot hope for extended prosperity unless our Bell companies are also financially sound and have good earnings."

Turning to the importance of public relations, Bollinger told telephone companies to acquaint more people with the peculiarities of utility operation.

A fact which should be made known to the public, he said, is that in the average business an investment of $1.00 more or less is required for every gross dollar of annual revenue.

In the telephone business, an average investment of $3.50 is required for every revenue dollar. The result, Mr. Bollinger pointed out, is that approximately 21 to 25 per cent of telephone companies' gross revenues are required to meet capital costs, assuming a balanced capital ratio and average station revenues.

"Our industry does not need, nor should it be accepting, taxpayer subsidy," Mr. Bollinger stressed. "Likewise we have every right to demand relief from unreasonable tax loads. If our federal government will take the unreasonable 10 per cent tax load off our backs, so that we can compete on even terms, we have nothing to fear."

Looking at the state picture, Harrold Peterson presented the "President's Report".

He told Oklahomans that their state now has 107 Independents operating 287 exchanges, of which 217 have been converted to dial. Forty-one others are in the process of conversion, so that by the end of 1962, including eight new exchanges to be established, there will be 266 Independent dial exchanges. This means that 90 per cent of the total of the 295 Independent exchanges will be dial. Independents now operate 98,579 of the 917,562 telephones in Oklahoma.

Mr. Peterson said that these dial conversions, as well as other improvements in service, point up the fact that Independent company managements are becoming more and more aware of changing conditions and are willing to listen to advice, and then put it into practice.

Elaborating on this subject, he quoted from William F. Miller, secretary-treasurer of the Iowa Independent Telephone Association, who said: "The key to survival, or success, or failure of a telephone company is good management."

Mr. Peterson then continued:

"We subscribe to that statement wholeheartedly and are glad to see the managers of our small companies awakening to their responsibilities. They are finding that they must keep informed on the improvements being made in equipment and methods of doing business and can no longer close their minds to the changes that are taking place around them.

"They are taking new interest in the telephone business. They are reading the industry magazines. They are realizing the importance of membership in our state and national associations, and are taking advantage of the services they have to offer.

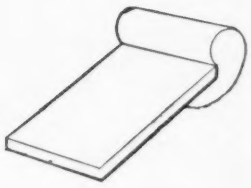
"They are attending district meetings and conventions, are discussing their problems with the factory representatives and neighboring telephone men and are realizing that the telephone business can and must progress with the times along with everything else.

"Various lending agencies have made funds available for improvement and rehabilitation programs with the result that our companies are putting their houses in order with improved billing and accounting methods and with plant improvement programs that are giving them a position of prominence in the telephone industry.

"We hope that all the telephone people of our state will continue to awaken to their responsibilities and the possibilities that surround us. Your association certainly wants to help everyone toward that goal."

(Continued on page 53)

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

AMERICAN and Delta Airlines have both placed orders with International Business Machines Corp. for computer-based electronic airline reservation systems known by the code name of Sabre.

The American Airlines installation is said to be the largest electronic processing system ever designed for business use. The IBM 9090 is a special purpose system. It will assist American Airlines in processing:

85,000 daily telephone calls.
30,000 daily requests for fare quotations.
40,000 daily passenger reservations.
30,000 daily queries to and from other airlines regarding seat space.
20,000 daily ticket sales.

In addition, the system will be able to prepare special reports on passenger traffic; and it can be expanded to handle air cargo inventories and routings.

Sabre puts in one location, instantly available to more than 1,100 of American's reservation desks in 61 cities, the complete "up-to-the-second" account of all scheduled American flights, the seats already reserved on them, and the seats that are not reserved. It also maintains a complete record of each reservation, including the passenger's name, telephone number and itinerary.

These details, and other necessary data, change from second to second as new reservations are made and previous reservations altered. The additions and changes are recorded in the magnetic memories of the computer center.

Information is fed into the center over 10,400 miles of leased circuits. Every American office will be equipped with special consoles and linked with the computing center through these telephone circuits.

Passengers' requests for reservations and other flight information are entered through the console and transmitted to the computing center in the New York City area. The computers respond through signal lights on the console, indicating seats available on all of American's more than 1,200 daily flight legs.

Passengers select a flight from those available and the American reservation agent presses a button on the console to confirm the flight chosen. As the seat is confirmed, the computer automatically subtracts that seat from the number available for future sale.

The agent also makes use of the console keyboard to record the passenger's name, telephone number, itinerary, and related information in the computer. There, all the information becomes a part of the record of the passenger's flight, until completed or cancelled. The entire transaction is also recorded on the printer of the console, providing the agent with quick visual confirmation of all data he has just placed into the computer.

The Delta Airlines IBM 9074 Sabre reservation system is tailored to the airline's requirements after a two-year joint study by the two companies. This system will permit high-speed, two-way transmission of data over long distances via leased communications lines. A computer center, planned for Atlanta, Ga., will be linked by these lines to nearly 300 electronic agent sets throughout the country.

The heart of Delta's Sabre system will be the computer center containing dual solid-state IBM 7074 computers, modified to meet the airline's requirements. Each computer will have a core storage capacity of 99,900 characters. The computers will have on-line access to eight advance, random-access magnetic disk files, each with a storage capacity of 50 million characters.

These computers will perform all calculations required to process reservations traffic; perform all logical and decision-making functions of the system (such as notifying agents of unconfirmed reservations); and control all other units within the system.

The entire system will be controlled by stored instructions in the computers' core memories. Each computer is capable of making 250,000 logical decisions per second, and each can retrieve a character core storage in four-millionths of a second.

Delta's reservation agents in the United States will communicate directly with the computer center, via agent sets. Delta facilities in six Caribbean cities will be connected to the system by standard teletype circuits. Teletype lines will also carry messages to and from other airlines.

A real-time data channel in each computer will schedule and control the flow of data into and out of the computer center, and will link incoming and outgoing communication lines to the computers.

Sabre is expected to help Delta process an anticipated flow of 32,700 daily telephone calls, 28,000 daily passenger reservations, and 15,000 daily ticket sales. The system is capable of handling more than 2,800 complete airline reservations an hour. It will also handle more than 10,000 daily queries to and from other carriers regarding seat space.

We often hear the prediction that within the next few years data transmission will bring in more revenue for operating telephone companies than voice transmission. Reports of these plans for large airline reservation systems cause us to wonder if perhaps this prediction will not come true sooner than we think.

•

"Is there a Future Scientist or Engineer in your Home?" is the title of a booklet just released by Battelle Memorial Institute, Columbus, O. This

(Continued on page 36)

Strowger

"That's right, Tom...

is easier to maintain"

Maintenance is an important factor to the buyer of dial switching equipment. That's why Arnold Pearson* always stresses the simple construction of Strowger Automatic. He explains that Strowger operates on a step-by-step principle which keeps repairs and adjustments to a minimum. But that's only part of the story...

Arnold points out that all Strowger switching components are positioned so that the circuit operation can be traced visually. He also mentions the fact that Strowger wearing parts are few and simple to replace. This speeds training of maintenance men and makes trouble-shooting easy!

Are you planning a dial conversion? Then get in touch with us. We'll send *your* AE representative in to help you solve your dial conversion problems. He can give you the complete Strowger story. And, he can provide you with information on how to finance Strowger dial equipment. To contact your AE representative, just write Automatic Electric Sales Corporation, Northlake, Illinois. In Canada, Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16.

**District Manager, Southeastern District, Automatic Electric Sales Corporation*

AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

booklet is offered as a primer to help parents and leaders of young people in the discovery and encouragement of the nation's future scientists and engineers.

The booklet outlines characteristics which may indicate an embryo engineer or scientist. It also emphasizes that if he, or she, is not discovered early enough and encouraged to complete required courses in high school, the chances are he will find it difficult to succeed at the university of his choice. Subjects and courses which are "musts" in high school are listed. In addition, it suggests other academic and associated activities which help to develop the embryo engineer or scientist.

•

Periodically, we hear reports of squirrel and gopher damage to aerial and underground cables, and the latest comes from the west coast. In an effort to control this problem in a humane manner, the Pacific Telephone & Telegraph Co. has enlisted the research help of experts at the University of California.

Previous attempts to discourage these gnawing pests have included using insecticide paint on polyethylene cable covering; placing metal roofs over the most tempting aerial cable, and maintaining cables under 10 pounds pressure.

The department of zoology at the University of California, in Davis, has decided to tackle the problem from a different angle, i.e., determine from research exactly why cables are so attractive for chewing purposes. These studies are, at present, confined to pocket gophers, as they seem to be the principal connoisseurs of buried cable.

The research has shown that pocket gophers do not attack underground cables because the materials in the cables are attractive, or have food value. The motive for chewing seems to be to get to the other side of the obstruction without having to go under or over it, or to wear down their rapidly growing incisors, by gnawing.

In the telephone company's opinion, neither of these reasons has enough validity to excuse the rodents. The university reported that it appears that some form of spaced wiring, such as is found in 3/16-inch hardware cloth mesh or the same degree of spacing of tightly braided wires, or a bronze coating, would make an armor adequate to resist attack.

A project of this nature, although scientifically sound, would prove extremely costly and difficult to implement. As a result, research is still in progress to devise rodent protection for existing cables. However, at last report, when offered a substitute of glass yarn insulation, the gopher promptly removed the glass material, carted it home, and lined its nest with it.

TEXAS' FASTEST GROWING CITY

Continued from page 29

developing and specifying the type and amount of central office switching equipment, cable, wire, poles and other facilities we will need in the next five years.

It's a big job . . . for a big city that's getting bigger by the day.

Very truly yours,
W. P. Esslinger
Division Manager
Irving, Tex.

Again, at the conclusion of the insert copy, the facts booklet on Irving expansion was offered.

No insert was used in September.

Residence Survey

With October bills, went an enclosure entitled: "What the Public Wants". Artwork was of telephone instruments and percentage marks, with a subhead: "Results of a Residence Telephone Survey in Irving". It read:

New telephone equipment is arriving each week. Most of it is being warehoused at our growing BLackburn-5 telephone center, awaiting its call to go into service as buildings are made ready.

Irving's growth during the next several years has been plotted. In the equipment now on hand—and on order—the capacity for meeting this growth is assured.

As we install our equipment, however, thousands of switches and terminals must be assigned to meet *present* service demands—to provide the *type* of service you want, as well as the amount. Where does this information come from? How do we know the number of Irving subscribers who desire one-party, two-party, or four-party service?

We have your requests on file, true. But experience tells us that not everyone who wants a different type of service takes the time to request it. If we are to be sure these folks get what they want—we have to go to *them* instead of waiting for them to come to us. That's what we did.

We made a mail survey of every residence party line customer in Irving. Out of 10,493 letters sent out, just a little better than 50 per cent of the customers who received them filled out and returned the information card. In the mail order business, that's a fine return. But we couldn't be satisfied until we knew what type of service the missing 50 per cent wanted. After all, they're our customers too.

We telephoned a representative cross-section of them, and got the answer. The majority of the folks who *didn't* return the cards are satisfied with the service they now have. Most of those who *did* return the cards want a different type of service.

Our telephone survey—combined with the mail survey—completed the picture. Perhaps the most significant fact we turned up was that there are almost as many customers who want to *keep* their 4-party service as want to change it to 1-party.

It will still be necessary for you to apply for a change in your type of service if you desire it. But now we know what to prepare for. We know what the public wants—and we are working to provide it.

Very truly yours,
W. P. Esslinger
Division Manager
Irving, Tex.

Construction signs such as this one were used during Phase 2 of the Irving campaign.

Step Up PR Pace

During this four-month period, public relations activity continued at an accelerated pace in Irving.

More talks were made to civic and service organizations.

News stories and pictures of telephone progress were in nearly every issue of the *Irving News*.

The third major phase of the public relations program will be described in the next TELEPHONY article in this series.

Have you taken advantage of the easier record retention schedules approved by the FCC?

Latest regulations now permit you to microfilm most bulky record files immediately

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Courts and Commissions

Approve Rate Increase for Southern Bell in Florida

The Florida Railroad & Public Utilities Commission authorized Southern Bell Telephone and Telegraph Co. to increase its rates in Florida by 1.6 million dollars annually, effective Dec. 1 (Telephony, July 8).

Intended to eliminate inequities in charges between cities, the increases will come about by a regrouping of exchanges.

The Commission said the increases would range from five to 75 cents a month in most cities. Some cities and towns with declining or static populations will get lower rates.

The Company, which serves 1,400,000 subscribers in Florida, had sought an increase of $2,191,500 in gross annual revenue, but the commission held this full amount wasn't justified. However, the commission did find that a phenomenal growth in some exchanges had rendered old rate schedules obsolete.

Asks Ind. Court Reconsider Bell Toll Raise Order

George L. Diven, former Indiana Public Counselor, on Nov. 17 asked the Indiana Appellate Court to reconsider its decision that affirmed an increase in intrastate toll rates (which the Indiana Public Service Commission had granted to Indiana Bell Telephone Co.) for all Independent companies in the state.

On Apr. 3, 1958, the Indiana commission granted Indiana Bell a $1,105,000 increase in Indiana intrastate toll rates (TELEPHONY, Apr. 12, 1958). This increase was effective Apr. 14, 1958.

Following the granting of the increase to Indiana Bell, the commission also authorized the intrastate toll rate increases for some 180 companies. The commission based its order on the necessity for uniform schedules of toll rates throughout the state.

Subscribers of Illinois Bell Telephone Co. in Indiana, of the General Telephone Co. of Indiana, and of Southeastern Indiana Rural Telephone Cooperative of Dillsboro petitioned the commission for a denial of the increase for those companies. On Aug. 1, 1958, the commission refused such a denial (TELEPHONY, Oct. 11, 1958).

Mr. Diven, then public counselor, brought before the Indiana Appellate Court on Mar. 18, 1960 the subscriber appeal from the commission order which authorized the new intrastate toll rates for companies other than Indiana Bell (TELEPHONY, Oct. 11, 1958).

The appellate court affirmed the commission's order, insofar as it involved Illinois Bell Telephone Co. (which operates 11 exchanges in northern Indiana), but divided 4-4 otherwise, and transferred the case to the Indiana Supreme Court (TELEPHONY, Apr. 16, 1960).

The supreme court of the state remanded the case to the appellate court. Judge Arch N. Bobbitt of the state's high court, in an opinion, said that appeals from decisions of the Indiana Public Service Commission must be decided by the appellate court, and that it could not transfer such cases to the state supreme court (TELEPHONY, May 28, 1960).

The Indiana Appellate Court then affirmed the commission's decision granting the increased toll rates for the Independent companies.

Mr. Diven is no longer public counselor, and it is understood that he is petitioning the Appellate Court on his own.

Approve 2 Mergers Involving Six Companies in Ohio

Six Ohio telephone companies were involved in two separate mergers approved by the Ohio Public Utilities Commission, it was reported on Nov. 26.

All six are owned by Telephone Service, Inc., of Lima, a holding company headed by George Quatman.

Under one merger, Northwestern Telephone Service Co. was to be the surviving company when consolidated with Ottawa Telephone Co. and Rockford Telephone Co. The three provide service in the general area of northwestern Ohio.

In the other merger, Northwestern Telephone Co. of Defiance,—a separate company from Northwestern Telephone Service, Co., Waseon, will be the surviving company when it joins with Lemoyne Telephone Co., Stony Ridge; and Webster Telephone Co., Luckey.

These three furnish service in and around Defiance; in Moline, Stony Ridge and Luckey; and in Woodville as well as in adjacent areas.

$3,500 Verdict for Plaintiff in Suit Vs. C. & P. of W. Va.

A judgment in the amount of $3,500 was returned in favor of plaintiff, Curtis Palmer Adams, on Nov. 22, by the Marion County (W.Va.) Circuit Court before Judge J. Harper Meredith.

The judgment against the Chesapeake & Potomac Telephone Co., of W. Va. grew out of an accident which occured in January, when a truck owned by the company broke loose from a parking place and struck an automobile owned and occupied by Mr. Adams.

The plaintiff contended that not only was his automobile damaged, but that he had suffered permanent injuries as a result of the accident.

OK Toll-Free Service, New Rates for N.Y. Bell Exchange

The New York Public Service Commission has accepted a tariff amendment filed by New York Telephone Co. under which toll-free service is to be established on December 17 between the New York company's North Clove and Millbrook exchanges and between North Clove and the Sylvan Lake Telephone Co.'s exchange at Hopewell Junction.

Because of the elimination of the 10-cent toll charge for North Clove-Millbrook calls and of the 15-cent charge for North Clove-Hopewell Junction calls, the company estimates a loss in toll revenues of $1,600. This will be offset, however, by the establishment of higher exchange rates which will produce about $2,100 in additional annual revenue. Institution of the toll-free service was requested in a petition signed by 175 of the 280 subscribers in North Clove.

On Nov. 19, New York Telephone introduced toll-free calling between Millbrook and its exchanges at Amenia, Dover Plains and Stanfordville. Further extension of the toll-free calling

A basic formula from Information Theory . . . provides a measure of the amount of information in a particular type of message, such as TV . . . helps determine the frequency bandwidth, for example, required to transmit the messages. Information Theory, pioneered at Bell Laboratories, guides the search for better communications systems.

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area of the North Clove exchange is scheduled in the near future.

The new monthly rates to North Clove subscribers will be as follows: Residence - one party, $4.50; two-party, $3.70; four-party and multi-party, $3.25. Business - one-party, $9.25; two-party, $8.00; multi-party, $4.95.

Wash. Commission Rules In Toll Settlement Case

The Washington Utilities & Transportation Commission on Nov. 22 issued its order in the complaint proceeding led by West Coast Telephone Co. of Everett, Wash., and General Telephone Co. of the Northwest against Pacific Northwest Bell Telephone Co., pertaining to the basis of settlement for interchanged intrastate toll traffic.

The principal issue was the determination of methods to be applied in apportioning over-all plant and expenses of the West Coast and General companies that should be allocated to message toll service.

This involved whether the so-called "Charleston" separations plan should be used for determining exchange circuit plant costs, and whether the principles of the "Modified Phoenix" plan should apply in allocating the two Independents' interexchange circuit plant costs. Also involved was the treatment that should be given to digit-absorbing equipment of the Independents.

Other issues involved in the case were the rate of return that should be given on West Coast's and General's toll investment and, in the case of West Coast, the classification of point-of-connection traffic.

The "Charleston" plan calls for the "minutes-of-use" concept in the apportionment of "exchange circuit plant" to toll service, while the "Modified Phoenix" plan provides for the blending of the costs of AT&T Long Lines' and Associated Bell companies' interexchange plant within a specific state, and apportioning the plant on a "conversation minute miles" basis.

West Coast and General asked the Washington commission to approve plans similar to the "Charleston" and the "Modified Phoenix" plans for use in apportioning its exchange circuit plant and interexchange circuit plant in connection with toll service furnished jointly with Pacific Northwest Bell. The plans proposed by the two Independent companies are included in the Separation Manual of the United States Independent Telephone Association.

Digit absorbing equipment is used to absorb the first two or three digits dialed on local calls to implement the 2-5 numbering system used in direct distance and operator toll dialing.

Miss Teen-age America of 1962, Diane Lynn Cox, of Richmond, Va., was among the 15,000 visitors to the Parker, Ford & Co. (investment brokers) exhibit at the state fair of Texas in Dallas held Oct. 7-22. Here she is pictured, looking at The Southwestern States Telephone Co. (Brownwood) panel, which was part of the Parker, Ford exhibit. With Miss Cox are (left) Hoover Kadane, vice president of Parker, Ford; and Roy Windham, vice president and sales manager of the Dallas office of Parker, Ford. The Southwestern States exhibit, in right half of photo, and one of four company panels, contained a map with flashing lights showing operations in Texas, Oklahoma, Arkansas, and Louisiana.

West Coast and General contended that since the equipment is provided because of toll service, its cost should be borne by toll, irrespective of the fact that its use is entirely for exchange service.

Pacific Northwest Bell contended that since extra digit equipment is activated only during local switching, it should not be assigned directly to toll.

The Washington commission made the following findings on the various issues involved:

(1) The commission upheld the West Coast and General companies in ruling that their exchange circuit plants should be apportioned in accordance with the features of the Charleston Plan, utilizing minutes of use. The commission stated that it favored the simplification of separation procedures achieved by the introduction of the Charleston Plan; that such plan is appropriate for intrastate separations because it is already in use for interstate Bell-Independent (B-I) settlements and uniformity in separation procedures is important; that its use in intrastate separation procedures provides Independent companies with a recognized, practical procedure for making Independent company cost determinations; and that Pacific Northwest's proposed weighting of minutes of use with a mileage factor is without merit under the present uniform separation procedures.

(2) The commission agreed with Pacific Northwest Bell in ruling against the application of the principles of the Modified Phoenix Plan to the intrastate interexchange plant of West Coast and General. It found that interexchange circuit plant should be apportioned between intrastate B-I business and other business on the basis of the relative intrastate B-I conversation-minute-miles and did not support the use of weighting to reflect the effect of the Modified Phoenix Plan.

(3) The commission also upheld West Coast and General in finding that digit-absorbing equipment which is provided by the two companies in order to participate in the nationwide numbering plan, and which is not essential for the completion of local calls, should be assigned to toll operations on the basis of toll minutes of use.

(4) The commission found that the evidence regarding the rate of return on toll investment which should be allowed West Coast and General on B-I intrastate operations was insufficient to justify the fixing of any particular percentage rate as being just, reasonable and equitable. The parties were ordered to negotiate further (not to exceed 90 days), regarding the rate of return to be allowed the two Independent companies.

(5) The Commission supported the position of the West Coast Telephone Co. on the issue of point of connection

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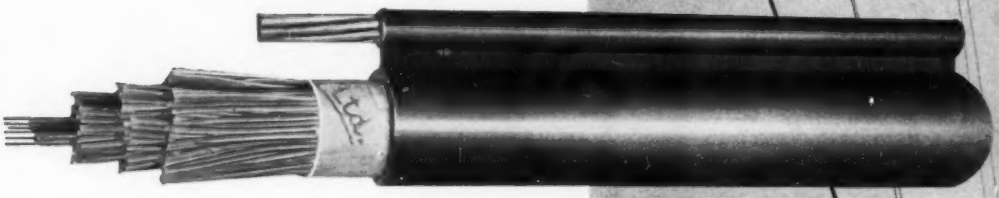

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traffic. It cited the 1959 USITA Separations Manual which stipulates that this traffic should be classified Independent-Independent (I-I) or B-I, dependent upon local agreement. Involved are telephone messages interchanged by West Coast and Pacific Northwest Bell on toll routes which are owned or controlled by West Coast and bear rates filed by that company. The commission found that such traffic should not be classified as B-I and should be made subject of further negotiations.

The Washington commission's order is the third to be issued in cases involving separations procedures between Independent and Bell companies.

On June 2, the Kentucky Public Service Commission issued an order in the case of General Telephone Co. of Kentucky *vs* Southern Bell Telephone & Telegraph Co., in which it (1) ruled against using the principles of the Charleston plan "minutes-of-use" concept in apportioning General's exchange circuit plant for toll; (2) rejected the application of the modified Phoenix plan in apportioning General's interexchange plant for toll, and (3) approved the assignment of General's digit absorbing equipment to toll (TELEPHONY, July 1).

On June 9, the Ohio Public Utilities Commission, in a complaint proceeding led by General Telephone Co. of Ohio against Ohio Bell Telephone Co., issued an order in which it (1) ruled in favor of applying the Charleston plan in apportioning General's exchange circuit plant for toll; (2) rejected the application of the Modified Phoenix Plan in apportioning General's interexchange circuit plant, and (3) approved the assignment of General's digit absorbing equipment to toll (TELEPHONY, June 17).

Orders in two other similar cases are pending—one in which General Telephone Co. of Florida filed a complaint against the Southern Bell Telephone & Telegraph Co. with the Florida Railroad & Public Utilities Commission, and the other in connection with recent hearings before the North Carolina Utilities Commission on separations procedures and toll settlement arrangements.

Ask Loan, Purchase OK's; Approve Sale in Ark.

The E. Ritter Telephone Co., Marked Tree, on Dec. 1 asked approval from the Arkansas Public Service Commission for authority to borrow $900,000.

The company provides dial service to all its exchanges with the exception of Marked Tree and Lepanto, for which conversion is planned. After the cutover, the company plans toll free service throughout its system, which

in addition to Marked Tree and Lepanto includes the Athelstan, Keiser, Payneway and Tyronza exchanges.

It also plans to increase its rates by about $18,000. This increase has been approved by the municipalities involved, the commission said.

•

The commission has approved the sale of Dalark Telephone Co. to Allied Telephone Co., Little Rock (TELEPHONY, Dec. 9).

Formerly owned by Miss Pearl Langley and James C. Woods, the Dalark company serves 39 stations. Allied plans to convert the exchange to dial service.

•

Also in Arkansas, the Union Telephone Co., Junction City, on Nov 29 asked to purchase the Junction City and Dodge City exchanges (TELEPHONY, Oct. 28). The two exchanges are owned by John W. Carter and serve 439 stations.

Order Refund; OK Raise; Permanent Rates in Kan.

The Kansas Corporation Commission on Nov. 29 ordered Ellinwood Telephone Co. to reduce its interim dial rates and to refund $3,600 to subscribers.

The commission had decided that interim rates in effect for approximately a year were too high.

•

Also in Kansas, the commission authorized White City Telephone Co. to increase its rates by $7,000.

•

KanOkla Telephone Association, Inc., Anthony, was allowed to make interim dial rates permanent at its Geuda Springs exchange.

Two Ask Sales Approvals; One Seeks Loan OK in Mo.

The Missouri Public Service Commission on Dec. 14 was to have heard the application of G. M. and Vernice A. Porter to sell the Greenfield and Arcola exchanges to the Greenfield Telephone Co., Inc.

•

In another sale request, Hale Telephone Exchange on Dec. 4 asked to sell to Chariton Valley Telephone Corp., Bucklin.

•

Also in Missouri, the New Florence Telephone Co. on Dec. 5 asked to borrow $76,000 from North Electric Co.

General Asks EAS OK in Wis.

The Wisconsin Public Service Commission on Dec. 11 was to have heard the application of the General Tele-

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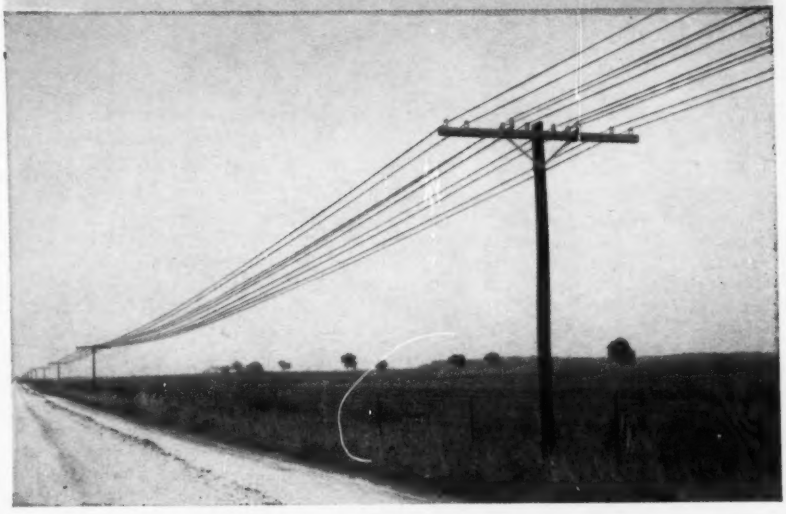

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phone Co. of Wisconsin to establish extended area service between its Eden exchange and the Wisconsin (Bell) Telephone Co.'s Fond du Lac exchange. General also is asking to increase rates at Eden.

Authorize Wisconsin Sale Financed by REA Loan

The Vernon Telephone Cooperative, Viroqua, on Nov. 24, was granted authority to buy the capital stock and property of the Westby Telephone Co. (TELEPHONY, Oct. 21).

The purchase will be financed by an REA loan.

General of SW Gets Raises At Three Tex. Exchanges

The following rate increases became effective in Texas exchanges of General Telephone Co. of the Southwest, San Angelo, during November:

	Old	*New*
Holliday, Dial, 425 stations, Nov. 1.		
Business		
One-party	$ 9.00	$ 9.75
Two-party	7.00	7.75
Residence		
One-party	4.50	4.75
Two-party	3.75	4.00
Kyle, Dial, 229 stations, Nov. 1.		
Business		
One-party	10.00	11.00
Two-party	7.50	8.50
Residence		
One-party	5.00	5.75
Two-party	4.50	5.00
Mt. Calm, Dial, 158 stations, Nov. 1.		
Business		
One-party	9.00	11.00
Residence		
One-party	5.00	5.75
Two-party	——	5.00
Four-party	3.50	4.00

Recent Quotations of Telephone Stocks

	12/1/61 BID	12/1/61 ASKED	11/1/61 BID	11/1/61 ASKED	Current Indicated Dividend Rate
Anglo-Canadian Tel. Co.	48¼	50¼	43	44½	$1.20
British Columbia Tel. Co.	49½	51	48½	50	2.20
California Interstate Tel. Co.	29	30½	25	26	.70
California Pacific Utilities Co.	28½	30	26	27¼	.90
California Water & Tel. Co.	45½	47	45½	47	1.36
Carolina Tel. & Tel. Co.	50½	53	49	51	1.60
Central Tel. Co.	34	35½	32¾	34¼	.88+Stk.
Chenango & Unadilla Tel. Corp.	28½	31	28½	31	1.35
Cincinnati & Subn. Bell Tel. Co.	113	116	106½	109½	4.50
Citizens Utility Co. "A"	36½	38½	34½	36	Stock Div.
Citizens Utility Co. "B"	30¼	32	29¼	30½	.60
Commonwealth Tel. Co.	30	32	26¾	28½	1.00
Florida Tel. Corp. Class A	33½	35½	29¾	31½	1.00
General Tel. Corp. Common	25⅜	Last Sale	24⅜	Last Sale	.76
Hawaiian Tel. Co.	23	24½	23	24½	.54
Independent Tel. Corp.	12⅛	Last Sale	12¾	Last Sale	—
Indiana Tel. Corp.	38	Bid	38	Bid	1.60
Inter-County Tel. & Tel. Co.	30¼	31¾	29¼	30½	.76+Stk.
Inter-Mountain Tel. Co.	20¼	21¼	20¼	21½	.80
Jamestown Tel. Corp.	90	Bid	90	Bid	6.00
Lincoln Tel. & Tel. Co.	74	Bid	71	Bid	3.00
Lorain Tel. Corp.	40½	Bid	40½	Bid	1.40+Stk.
Middle States Tel. Co. of Ill.	33½	35½	32	33½	.92
North Carolina Tel. Co.	1⅛	1⅝	1⅛	1⅝	—
Northern O. Tel. Co.	53	56	49	53	1.60
Peoples Tel. Co.	22	Bid	22	Bid	.80
Pioneer Tel. Co.	34	Bid	36	Bid	1.00+Stk.
Rochester Tel. Co.	33	Last Sale	31½	Last Sale	1.10
Southeastern Tel. Co.	29½	31½	28½	30½	1.00
Southern New England Tel. Co.	55¼	57¼	53¼	55¼	2.20
Southwestern States Tel. Co.	36	37½	34	35½	1.28
Tel. Service Co. of O., Class A	26½	28½	28½	30½	.36+Stk.
Tidewater Tel. Co.	27½	Bid	27½	Bid	1.40
United Utilities, Inc.	31¾	33¼	29	30½	.88
Western Carolina Tel. Co.	11	12	11¾	12¾	.40
West Coast Tel. Co.	37¾	39¼	37⅝	39	1.36
Western Light & Tel. Co., Inc.	34¼	36	34¾	36¼	1.20
Western Utility Corp.	16¾	17¾	15	16½	.40
Winter Park Tel. Co.	40	45	40	45	1.20

Approve Two Neb. Financing Requests; Consider Increase

The Nebraska Railway Commission on Nov. 27 gave The Lincoln Telephone & Telegraph Co. authority to issue and sell first mortgage 5 per cent Series E bonds totaling 4 million dollars. The proceeds will be used to retire $2,510,000 of bank loans and to finance the company's continuing program of extending and improving its facilities (TELEPHONY, Sept. 30).

The bonds, dated Dec. 1, were sold for 101.54 per cent of face value, thus reducing the actual interest cost from 5 per cent to 4.9 per cent. Three million dollars will be received on Dec. 15; and 1 million dollars on Mar. 30, with appropriate compensation for the interval between the date of issuance and the date of receipt.

Purchasers were the Bankers Trust Co., Commonwealth Edison Service Annuity Fund, Aid Association for Lutherans, Indianapolis Life Insurance Co., Bankers Life Insurance Co. of Nebraska, American United Life Insurance Co., Midwest Life Insurance Co., Nebraska National Life Insurance Co., and the University of Nebraska Foundation.

The Lincoln company now has outstanding the following first mortgage bonds:

$7,500,000 series A, 2-3/4% bonds due Jan. 1, 1976.

$2,500,000 series B, 3-3/8% bonds due Apr. 1, 1982.

$5,000,000 series C 4-7/8% bonds due Feb. 1, 1988.

$4,500,000 series D, 5-3/8% bonds due Mar. 1, 1990.

In addition, there are $1,860,000 of long-term 4-1/8 per cent promissory notes outstanding.

The Nebraska commission on Nov. 30 approved a request of the Nebraska Central Telephone Co., Gibbon, for authority to issue and sell $110,000 in notes payable over a period of five years. The company proposes to rebuild rural lines and add equipment necessary to reduce the number of subscribers per rural line and to extend and improve facilities.

•

The Commission on Dec. 14 was to hear the application of the Lodgepole Telephone Co. for permission to increase rates on all classes of service.

Approve Raise in Missouri

Northeast Missouri Rural Telephone Co., Green City, on Nov. 29 was granted permission by the Missouri Public Service Commission to raise rates effective Dec. 1 (TELEPHONY, Dec. 9).

Approve Stock Issue in Ill.

On Nov. 29, the Illinois Commerce Commission authorized Middle States

A Christmas Thought

This is the season for wishful waiting . . . for sky gazing in anticipation. For the "Satellite" that streaks our skies at Christmas is one of love and wonder and warmth. It is *Saint* Nick not Sputnik, sped on his way by the spirit of giving not grasping; of hope not hate. In this spirit, the men and women of USI extend to you their wish for a very happy holiday and a most rewarding year ahead. Merry Christmas!

UNITED STATES INSTRUMENT CORPORATION.

Telephone Co. of Illinois to issue up to 7,600 shares of its $10 par value common stock.

Obituary

JOHN BIRCHMORE, 74, president of the Comer (Ga.) Telephone Co. died recently in Athens, Ga.

The Comer company was founded by Mr. Birchmore's father, W.C. Birchmore in 1899 and still is controlled by the Birchmore family.

Beginning with a two-telephone grounded line running from Comer to Danielsville, the system soon covered the county with switchboards in every town. It now provides 2,500 subscribers with dial service.

Cut-over to dial was accomplished in June 1953 after obtaining the first Rural Electrification Administration loan in Georgia and the fifth in the nation. The Comer company was also the first in the state of Georgia to set a flat rate for rural telephone service.

Mr. Birchmore was born in Maxeys, Ga., and later moved to Comer, where he attended school.

As a small boy he worked with his father in the Comer Telephone company's office.

He began his career in the hotel business as a manager and auditor, entering the telephone business at a later date.

JOHN BIRCHMORE

Elected president of the Georgia Telephone Association in 1954, he held that post for two years. He also was active on the REA Advisory Board.

Mr. Birchmore had served as Kiwanis Lt. Governor in Georgia and also was instrumental in establishing the first Federal Housing Authority for the city of Comer and served as director for several years.

Survivors include his widow; two daughters, Charlotte Birchmore and Mrs. Mary B. Burousas; a son, John C.; and three grandchildren.

Densmore, Duckett Take New Central Group Posts

Col. L. D. Densmore, executive vice president and general manager of system operations for Western Power & Gas Co. and affiliated telephone companies, will become special assistant to the president effective Jan. 1, 1962.

Toral F. Duckett, vice president and assistant general manager, will succeed Col. Densmore as executive vice president and general manager.

Col. Densmore will continue to have his headquarters in Lincoln, Neb., location of the companies' general offices.

This announcement was made by Western Power & Gas Co. president Judson Large at a recent directors' meeting in Lincoln. Mr. Large said, after 33 years of service with Western Power & Gas Co. and its predecessors, Col. Densmore had requested that he be relieved of the administrative responsibilities of system management,

COL. L. D. DENSMORE

and be given a less demanding assignment. In addition to continuing an active part in the affairs of the Western Power & Gas companies as special assistant to the president, Col. Densmore will retain his directorship of Western Power & Gas, as well as of each of the affiliated telephone companies, which include Central Telephone Co., La Crosse Telephone Corp., Middle States Telephone Co. of Illinois, Virginia Telephone & Telegraph Co., Southern Telephone Co., Southeastern Telephone Co., and Florida Central Telephone Co.

T. F. DUCKETT

Col. Densmore, who attended the University of Nebraska, and Chicago Law School, joined Central Electric & Gas Co. (now Western Power & Gas Co.) in December 1928, as assistant counsel in the legal department; was named assistant general manager in 1930. Prior to joining the system, he had served as a member of the Nebraska House of Representatives, and for three years, was secretary of the Nebraska Railway Commission.

Following the acquisition of the Virginia, West Virginia, and North Carolina telephone properties in 1931, Col. Densmore moved to Charlottesville, Va., to serve as general manager of these properties. He returned to the general offices, then in Sioux City, Ia., in 1939 as general commercial manager.

Col. Densmore, who was commissioned a second lieutenant, field artillery in France during World War I, re-entered the military service in November 1940, serving as chief of Intelligence Division, Office of the Chief Signal Officer, War Department, and as executive officer, Signal Section 4th Army and Western Defense Command. He landed in North Africa and Sicily with the 9th Division at the time of the initial invasions, and was stationed in Italy until his return to the United States prior to separation from the service in April 1946. He was awarded the Legion of Merit, Bronze Star, Commendation Ribbon, Purple

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Heart, Order of the British Empire, Order of the Sainta Maurice and Lazarus (Italian), Order of the Crown of Italy, and the Order of Sant' Agata (Republic of San Marino), and numerous campaign medals for his distinguished service to his country.

After his return from military service, Col. Densmore returned to Charlottesville, Va., and was named vice president and division manager of the telephone properties. In 1949, he was transferred to the general offices in Lincoln, as vice president and general manager of over-all operations of Central Electric & Gas Co., and affiliated telephone companies.

In 1961, Col. Densmore was named executive vice president of Western Power & Gas Co., and affiliated telephone companies.

Throughout the years, Col. Densmore has been active in the affairs of the United States Independent Telephone Association, serving in numerous capacities. At the present time, he is on the association's board of directors, and is a member of the executive committee.

Mr. Duckett became associated with the system in September 1928, as an office manager in Hot Springs, S.D. The following year, he was promoted to the position of material supervisor and transferred to the general offices, then located in Omaha, Neb. In 1932, he became disbursement accountant in the general office disbursement accounting department, moving to Sioux City in 1934. He occupied that position until 1938, when he became manager of the system's Iowa telephone properties. He served as district manager, headquartering first in Sioux City, Ia., later in Le Mars, Ia. In 1946, he returned to the general office, which had meanwhile moved from Sioux City, Ia., to Sioux Falls, S.D., as manager of the western division, a grouping of properties in Iowa, Minnesota, North Dakota, and South Dakota.

In 1950, when the system's central and western divisions were consolidated, Mr. Duckett was named assistant to the vice president and went to Tallahassee, Fla., to temporarily take charge of the operations of Southeastern Telephone Co., and, more particularly, the conversion of the Tallahassee exchange to dial.

Following the Tallahassee conversion in August 1950, Mr. Duckett returned briefly to the general offices. Later he took over the operation of the company's properties in West Virginia. He headquartered in Bluefield, W. Va., until the company sold its interest in these properties in 1953. At that time, he returned to the general offices in Lincoln, as assistant general manager. In 1955, he was named vice president and assistant general manager.

Earlier in 1961, Mr. Duckett, who had been a director and vice president of each of the system's telephone companies, was elected executive vice president of Western Power & Gas Co. In November 1961, he also was elected a director of Western Power & Gas, and on Jan. 1, 1962, he becomes executive vice president of the system operations.

SW Bell Tex. Installer Sells Telephone in Treehouse

Southwestern Bell Telephone Co.'s South Texas area telephone people are justly proud of a sale made by Laredo Station Installer Berry Reed.

Mr. Reed is the gentleman responsible for the treehouse telephone for little Valerie Leyendecker, which is pictured on our front cover.

Not only does Valerie, daughter of Mr. and Mrs. Thomas A. Leyendecker Jr., have her own telephone, but the Leyendecker's teen-age children also have their own separate telephone and listings.

How did Mr. Reed convince the Leyendecker family of the need for such adequate telephone coverage?

Good salesmanship, he says.

He then adds, "Of course, Mr. and Mrs. Leyendecker being my father-in-law and mother-in-law didn't hurt."

Marketing Group to Hear Loevinger, FTC Member

"Government-Marketing Relations in an Evolving Economy" is the over-all program title of the winter conference of the American Marketing Association, to be held on Dec. 27 at the Biltmore Hotel, New York City. Among the speakers will be:

Lee Loevinger, antitrust chief of the Justice Department, talking on: "The Social Responsibilities of Marketing".

A. Everette MacIntyre, commissioner, Federal Trade Commission. Topic: "The Uncertainties under Our Antimonopoly Laws".

Cal. Spring Meeting

The California Independent Telephone Association will hold its spring meeting on Feb. 8 and 9 at the Fresno Hacienda, Fresno. Each member company, as well as associate members and other organizations attending, is urged to limit representation at business sessions to two officials or management employes.

Mrs. Strehl Injured in Fall

Mrs. William C. Strehl—whose husband was formerly with Suttle Equipment Co., and now is West Coast re-

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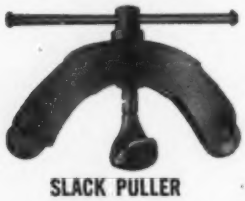
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gional sales manager for Ansonia Wire & Cable Co.—suffered a severe fall recently. She is currently hospitalized with a fractured hip at the Huntington Memorial Hospital, Pasadena, Cal.

NATION'S CAPITAL

Continued from page 18

Hill luminaries are determined to establish a Department of Urban Affairs and this issue should be a hot one.

An attempt will be made to enact legislation authorizing a reorganization of the Securities and Exchange Commission.

Secretary Goldberg wants to revise the Taft-Hartley Act.

Goldberg also wants legislation to regulate pension and welfare plans. He wants broad power to check employer files and records in the operations of these plans which involve the so-called fringe benefits for employes' health, sickness, accident, vacation and old age. Such legislation got quite a run in the last session and might be on the agenda early in the next session.

An attempt will be made to raise postal rates. Facsimile mail is apparently a dead issue.

Repeal of the Silver Purchase Act will be sought (in line with the President's recent action taking U. S. currency off the silver standard).

Secretary Udall, who rivals Secretary Goldberg as the most ubiquitous man in Washington, wants more money to preserve wilderness areas as parks and to create more public playgrounds.

The Labor Department will seek appropriations for a broad worker retraining program as a plan to alleviate the unemployment situation.

A new tariff act will be introduced, giving the President the power to negotiate across-the-board reductions (instead of item-by-item as he now has). Coupled with this legislation will be a program for giving federal aid to workers, communities and industries damaged by tariff cuts. The European Common Market, as mentioned above, constitutes serious competition for American business. The public will have to get used to the idea that trade is a two-way street. In order to export, we must also import. In order to sell another country what we have, we must buy what they have to sell.

A pitched battle along liberal-conservative lines is bound to develop over the administration's plans to revise the Battle Act to give the President the discretion for trading with communist countries.

The forthcoming session is shaping up as an interesting one. Key administration people have been barnstorming

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the country trying to sell President Kennedy's program and this might win some grass roots support, but the success of the President's program will depend heavily on the acumen of the new Democratic leadership on the Hill.

Taylor, Boyd, Wopat, Wright In New GT&E Assignments

For reasons of health, Jacob B. Taylor has asked to be relieved of his responsibilities as executive vice president-finance of General Telephone & Electronics Corp., New York; and effective Jan. 1 will become vice president-staff on special assignments, it was announced on Dec. 8 by Donald C. Power, chairman and chief executive officer. Mr. Taylor will continue to report to Leslie H. Warner, president.

On the same date, Thomas A. Boyd, executive vice president-administration, will become executive vice president-finance, Mr. Power announced. With Mr. Boyd's new appointment, the position of executive vice president-administration was discontinued.

Robert M. Wopat, president of General Telephone Co. of Illinois, will become executive vice president-telephone operations, General Telephone & Electronics Corp., a new position.

Walter G. Wright, vice president-operations, General Telephone & Electronics will succeed Mr. Wopat as president of General Telephone Co. of Illinois. With Mr. Wright's new assignment, his previous position was discontinued.

All presidents of telephone operating companies, as well as those parent company officers and other key personnel who have reported either to Mr. Boyd or Mr. Wright, will report to Mr. Wopat.

J. B. TAYLOR

Born in Perth Amboy, N. Y., Mr. Taylor received a B.S. degree in economics from the University of Pennsylvania, a master of arts degree from University of North Dakota, and an honorary degree of doctor of administration from Bowling Green (O.) State University. He is a certified public accountant in both North Dakota and Ohio.

T. A. BOYD

Before joining General as vice president-finance in October, 1957, Mr. Taylor had been vice president, business manager, and treasurer of Ohio State University, with responsibilitiy for the university's finances and investments. He formerly had served as professor of accounting and head of the accounting department at Ohio State, and on the faculty of the University of North Dakota.

R. M. WOPAT

Mr. Taylor was elected executive vice president-finance of GT&E in 1959.

He is a past president of the American Accounting Association, of the Central Association of College and

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University Business Officers, of Beta Alpha Psi, and Ohio State University Faculty Club.

He is also co-author of several accounting textbooks published by McGraw-Hill Book Co., Inc.

In addition, Mr. Taylor is a director of a number of GT&E subsidiaries. He is a director of The Lincoln National Life Insurance Co. of New York; and a member of the board of trustees of Teachers Insurance & Annuity Association of America.

Mr. Boyd, who was born in Lewistown, Ill., received a B.S. degree in business administration from University of Illinois.

Before joining General, he served with the public accounting firm of Arthur Andersen & Co., Chicago, working as a specialist in public utility audits and investigations.

In 1929 he became controller of Associated Telephone Utilities Co., a predecessor of General Telephone

W. G. WRIGHT

Corp. and General Telephone & Electronics Corp. Upon reorganization of Associated Telephone Utilities Co. in 1935, he became controller of General Telephone Corp. which became General Telephone & Electronics Corp. in 1959.

Mr. Boyd serves on the board of a number of GT&E subsidiaries. He is also a director of Fireman's Mutual Insurance Co., and a member of the advisory board of Chemical Bank New York Trust Co.

Mr. Boyd was elected a vice president of General Telephone Corp. in 1940, and in 1957 was elected executive vice president-administration.

A native of York, Pa., Mr. Wright received a B.S. degree in electrical engineering from Rutgers University.

He has been in the telephone industry since 1924. After five years of engineering experience with operating companies of the Bell System, he

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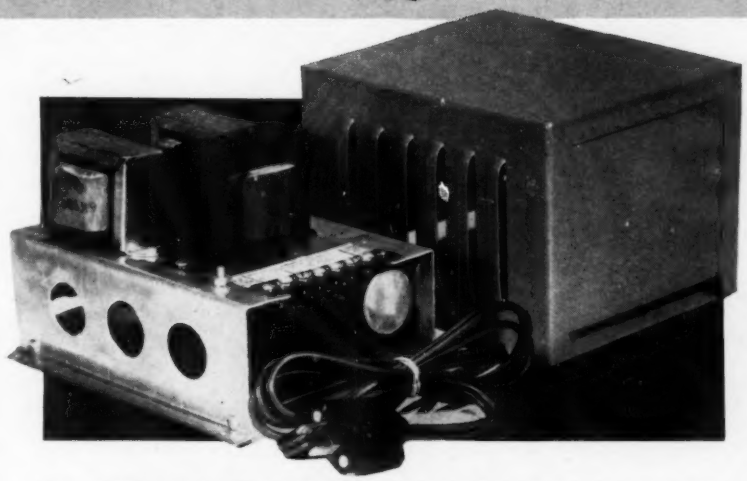

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joined the International Telephone & Telegraph Corp. in 1929. He held many positions in both engineering and operations during the 22 years with the International System, including 10 years in their South American properties.

In 1951, he joined the General System as chief engineer for General Telephone Co. of Michigan. From 1953 to 1957 he served as president of General Telephone Co. of the Southwest. He was elected vice president-operations of General Telephone Corp., in 1957.

Mr. Wright is a member of the board of the American Standards Association, and the New York chapter of Armed Forces Communications & Electronics Association. He is a former member of the board of directors of the United States Independent Telephone Association.

Born at Kansas City, Mo., Mr. Wopat received his B.S. degree in electrical engineering from the University of Michigan in 1936.

Later that year, he became associated with the Gary Group of operating telephone companies, where he remained until 1940, when he became a consulting engineer in Fort Wayne, Ind.

In 1943, Mr. Wopat joined the U. S. Navy, and attained the rank of lieutenant by the time he was discharged in 1946. Upon his return to civilian life, he joined the Texas Telephone Co. at Sherman, as plant superintendent.

In 1949, he was appointed plant supervisor and division plant engineer of the General Telephone Co. of Pennsylvania, and one year later, was advanced to the post of general plant superintendent and operating vice president of General Telephone Co. of Ohio. In 1954, he became president of the General Telephone Co. of Upstate New York, a position which also included the presidency of the General Telephone Co. of Vermont, the Tri-State Associated Telephone Co., and the Delaware Valley Telephone Co.

Mr. Wopat was elected vice president in charge of research and engineering of Automatic Electric Co., and president of Automatic Electric Laboratories, Inc. in 1955. When, in 1957, Automatic Electric Laboratories was expanded to become General Telephone Laboratories, Inc. Mr. Wopat became president. He also retained his position as vice president in charge of research and engineering for Automatic Electric Co.

He was named to the presidency of General Telephone Co. of Illinois in January, 1960.

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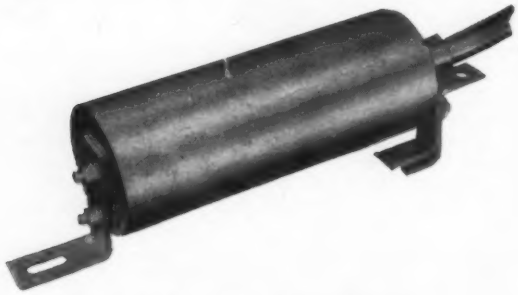

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Texas Association Books Speakers for '62 Convention

The Texas Telephone Association, which has set Mar. 11, 12, and 13 for its 1962 convention, to be convened in Dallas at the Sheraton-Dallas Hotel, reports it has a good lineup of speakers for the program.

Among those booked already for the program are Paul Henson, executive vice president of the United Utilities, Inc., Kansas City, Mo., and recently elected third vice president of the United States Independent Telephone Association. Mr. Henson, who has served the USITA on its engineering committee, is expected to speak in that general area.

W. F. Corman, manager of the Southland Telephone Co., Atmore, Ala., and a director of the Alabama-Mississippi Independent Telephone Association, will also be on the Texas Convention program.

Carl Ulffers Jr., assistant vice president of American Telephone & Telegraph Co., will also be a speaker at the Dallas meeting.

Illinois Association Conducts Convention Program Survey

John F. Tharp, executive secretary of the Illinois Telephone Association, in announcing that the state convention will be held May 24 and 25 at the Abraham Lincoln Hotel in Springfield, also stated that the association's convention committee recently conducted a survey of all telephone companies and suppliers to gather suggestions for the convention program.

Mr. Tharp also mentioned that the annual golf outing will be held on May 23.

Pa. Communications Group To Hold Winter Meeting

The Communications Committee of the Pennsylvania Electric Association will hold its Winter Meeting at the Bellevue Stratford Hotel in Philadelphia on Jan. 25 and 26.

Subjects covered will include emergency radio communication channels, remote outage indicating systems and solid state tone multiplex equipment. A panel discussion on telemetering, transfer trip and supervisory systems will be held.

Reservations for rooms should be made not later than two weeks prior to the meeting date by writing to the Bellevue Stratford Hotel, Broad and Walnut Streets, Philadelphia 2, Pa.; Attention: Rodney Clymer, reservation manager.

A copy of reservation requests should be sent to F. H. Travers, Philadelphia Electric Co., 900 Sanson St., Philadelphia 5, Pa., who is meeting coordinator.

OKLAHOMA MEETING

Concluded from page 32

Other speakers at the convention, and titles of their talks follow:

Norman H. McFarlin, customer relations, ITT Kellogg: "Three Views of the Telephone Industry".

Willard Ross, sales engineer, Motorola Communications & Electronics, Inc.: "Why Mobile Radio-Telephone for the Independent Telephone Company?"

Oklahoma Lt. Gov. George Nigh: "Crossroads of the Nation".

Clyde J. Watts, Oklahoma City attorney: "Strategy for Survival".

The following directors will serve the association for the coming year:

L. A. Guest of Davenport; R. E. Harris of Purcell; John R. Hollis of Hinton; Jack Holt of Stilwell; Jack Keith; A. L. McFadden of Ringwood; F. E. Messecar of Broken Arrow; O. H. Mullen of Inola; H. R. Peterson, and Truman Wood of Kingfisher.

The directors elected the following officers: President, Mr. Holt; first vice president, Mr. Wood; second vice president, Mr. Mullen; secretary, Hugh D. Straughn of Oklahoma City and treasurer, Arval A. Schultz, Oklahoma City.

STEP–BY–STEP

Continued from page 24

a certain portion of the total number of calls, as in the case of a selector last-trunk-busy meter.

Equal in importance to the number of calls is the length of time each call occupies a given trunking path. The number of calls (telephone conversations) that can be handled by a certain amount of equipment decreases in direct proportion to the increasing duration or circuit occupancy (in seconds) of each call.

It is important, therefore, that, in calculations using information obtained by permanently-installed traffic registers, an accurate average of the holding time per call be known. This information is obtained when traffic studies using special scanning equipment are made by specialists in this field.

Frequency of Readings

Any reduction in the number of readings on the installed meters will save time and money, and this part of the procedure should be carefully reviewed for possible savings. A suggested schedule might be as follows:

Originating Pegcounts—Incoming Selector Pegcounts. Three successive daily readings per month. This gives two daily (24-hour) counts which may

Balanced breaking strength of the conductors—400 pounds plus, with #18 AWG, 30% copperweld. Adhesion of the insulation—strong enough to prevent slipping at maximum load without physical or electrical failure. Neoprene jacket—tough, abrasion and weather resistant with enough "beef" to prevent buckling at the "P" clamps all the way up to maximum conductor strength. Compression cutting resistance—no break-down in "P" clamps up to overall breaking strength of the conductors. This sturdy balanced construction resists deformation and provides greater protection against lightning failures. This combination of exclusive Alphaduct features assures you of built-in balance for more years of trouble-free service and lower initial installation costs.*

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Dial Tone Delay—Last Trunk Busy Readings. Taken once a week, preferably on each Monday of the month.

Connector Lost Calls. Readings taken twice a month. The time between the first and last reading to be four full weeks (28 days).

Summary

In summing up the value of permanently-installed traffic registers, we must bear in mind that in actual practice we do not obtain the high degree of accuracy that might be obtained under ideal circumstances. Some of these field conditions which would tend to reduce the accuracy of the data obtained by this method are:

(1) Mechanical and electrical operating failures, resulting in under- or over-scoring.

(2) Inaccuracy of readings due to being read at incorrect intervals.

(3) Registrations on traffic registers due to other than installed purposes, such as would be due to testing, routine trouble shooting, inclement weather and cable failures.

(4) Interpretations of readings will vary, being almost directly proportional in their value to the knowledge and experience of the analyst.

(5) Difficulty in keeping correct records with fluctuating trunking changes in areas of rapid expansion.

With this in mind, results obtained should only be considered as a worthwhile and useful indication of developing trouble spots, pinpointing areas to be thoroughly checked and investigated by the Traffic Studies Engineering Department.

One such area of fundamental importance to good traffic engineering is the correct assignment of lines and normals, which directly affects and influences the traffic load and balance of the central office trunking paths.

Only by the combining of correct engineering design and the best methods of line and normal assignments will the optimum efficiency of the central office be reached and worthwhile equipment savings be realized.

Cook Wirecom Division Makes Five Sales Appointments

William Holcomb, general manager of the Wirecom Division, Cook Electric Co., has announced five sales department appointments.

Howard A. Utech has been named division sales manager with offices at 2700 N. Southport Ave., Chicago. He will direct the over-all national and international sales effort of Wirecom liaison engineers and agents. In his prior position he handled Wirecom accounts in the New York area.

H. A. UTECH

Prior to joining Cook, Mr. Utech was sales manager for both Chester Cable Corp. and Crescent Co. Inc.

R. B. MCMAHON

Robert B. McMahon will head the Wirecom Division's New York area office. He will be located at 18 Pinecrest, Warwick, N.Y. and will handle accounts in New York, New Jersey, Maryland, Delaware and the New England states.

Before becoming affiliated with Cook, Mr. McMahon was associated with the Southern New England Telephone Co. and the Fall River Gas Works Co.

Mr. McMahon will be succeeded in his prior position of handling Wirecom sales in Indiana, Ohio and Michigan by S. A. Snyder. Mr. Snyder will have headquarters at 645 Portland Way South, Galion O.

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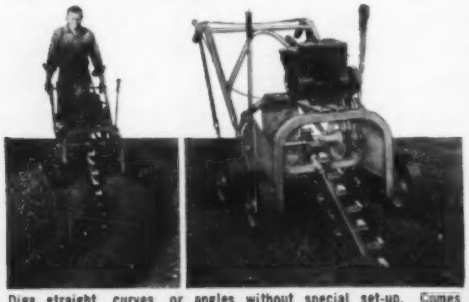

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A 24-year telephone industry veteran, Mr. Snyder was formerly associated with North Electric Co. and held positions as manager-line supplies, regional manager and sales service representative.

S. A. SNYDER

Kenneth J. Paul has been named sales engineer for the states of Mississippi, Alabama, Georgia, Florida and South Carolina. His mailing address is P.O. Box 448, Tallahassee, Fla.

Mr. Paul formerly was vice president of International Teletronics, Inc., Dallas, Tex., and prior to that sales

C. A. LESTER

manager of Universal Controls Corp., Dallas.

Charles A. Lester has been appointed sales engineer for southern California, southern Nevada, Utah and Arizona. He will be headquartered at the company's regional offices at 8170 Beverly Blvd., Los Angeles 48, Cal.

K. J. PAUL

Before joining Cook, Mr. Lester was a manufacturers representative for Larry Lester Sales Co., Los Angeles.

Yearning to Learn

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13530A	COMPROMISE NETWORK
13531	NETWORK H88
13532	NETWORK NON-LOADED
13533A	NETWORK
13594	RELAY ASSEMBLY
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News on New Products

HANDS-FREE CAR TELEPHONE—A new car telephone, designed for convenience and safety and featuring "hands-free" operation, has been developed by AC Spark Plug, the Electronics Division of General Motors.

Called the "AChieverfone," the system eliminates the conventional telephone handset by utilizing a small boom-type microphone which pivots out from the ceiling of the car.

The "boom" can be positioned for the user's operating convenience, thus leaving the hands free from any contact with the telephone, according to Jack F. Steele, commercial sales manager for AC-Milwaukee.

The system operates through contact with telephone company base stations located in more than 350 areas in the country. A call can be placed or received between the car and any other telephone instrument within an approximate radius of 30 miles of any base station. The AC unit now is available through local telephone companies.

"The AChieverfone is the ultimate in mobile communications service for the man on the move," Mr. Steele said. "What it amounts to is instant communications. You no longer have to wait to get back to your office to communicate with a customer, a field representative, or a business associate. Or you don't have to wait for them to call you.

"The telephone at your fingertips in your car makes it possible for you to keep that communications link intact at all times. It is the answer to long sought after needs of immediate and constant contact," he stated.

Dan Schutz, director of safety for the Wisconsin Motor Vehicle Department, tests the "Hands-Free" AChieverfone.

The "push-to-talk" function normally associated with mobile radio-telephone is accomplished in the "AChieverfone" by a foot-operated switch similar to that used for dimming headlights. AC points out the combination of the overhead microphone and foot switch frees the hands for note taking, thumbing through reference material, or other activities. Request NP1772.

•

PULLING EYE—Securing pole guys at the anchor end with Guy-Grip deadends can now be accomplished faster, and with greater ease and safety than before, Preformed Line Products Co. states, by use of the new Preformed Pulling Eye.

The most significant feature of the design is the extra-large eye which is considerably offset from the center line of the anchor rod, which is reported to permit ample space between the guy and the chain hoist for unre-

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Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1772_____; NP1773_____; NP1774_____; NP1775_____;
NP1776_____; NP1777_____; NP1778_____.

Name .....

Company .....

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12/16/61

stricted wrapping-on of the legs of the Guy-Grip dead-end.

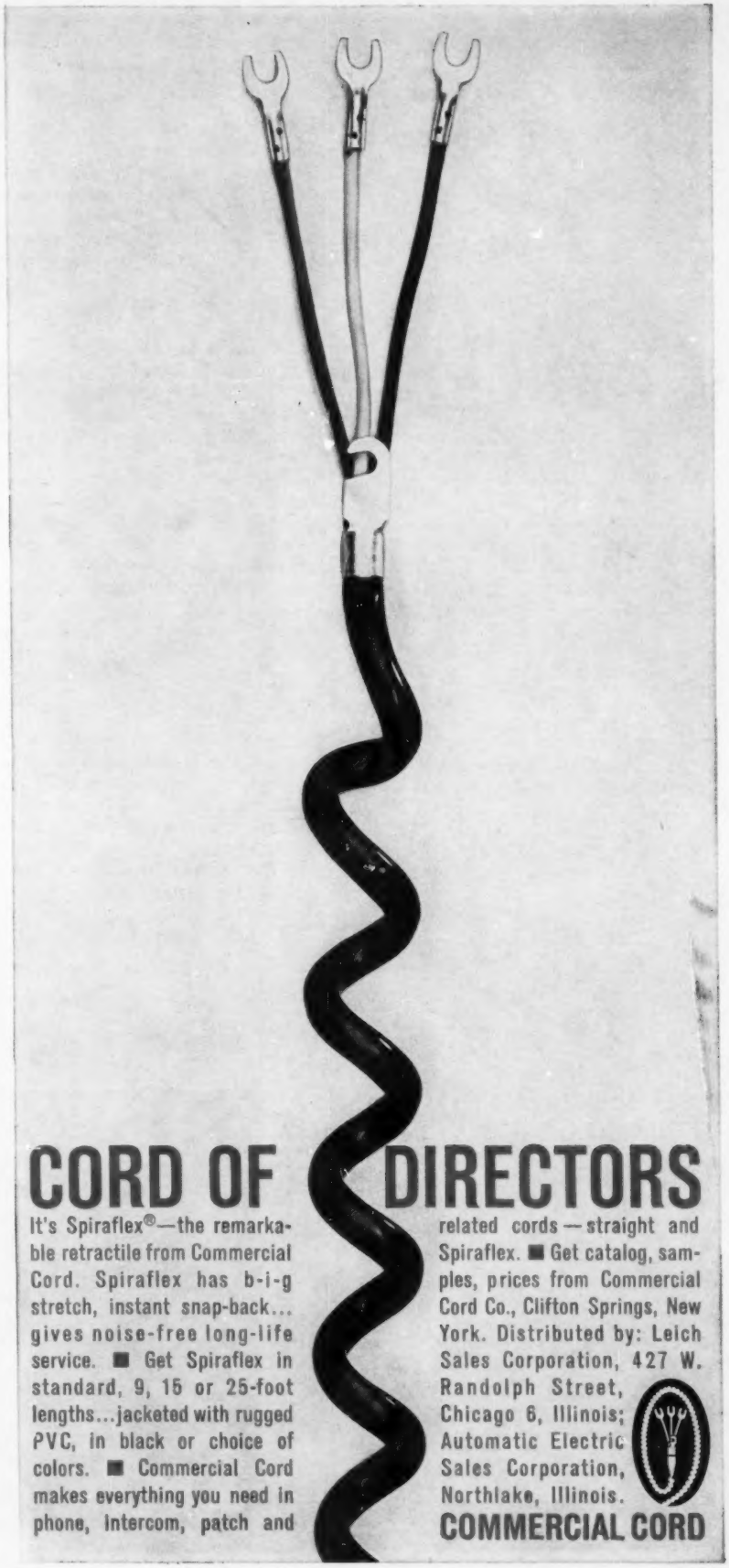
Made of corrosion-resistant nodular iron, the new Preformed Pulling Eye is said to withstand 15,000 pounds pull.

The keeper adapts the pulling eye to anchor rods of varying diameters: ½ inch; ⅝ inch; and ¾ inch. The tool is used without keeper on 1¼ inch anchor rods. A coat of vinyl is said to protect the pulling eye from corrosion. Request NP1773.

•

POWER SUPPLIES—A new series of AutoReg silicon power supplies, designed primarily for use with lead-calcium grid batteries, is being produced for communications and microwave by the C & D Batteries Division of The Electric Autolite Co.

Designated the "ARF" series, the new power supplies are said to reduce both the original installation and maintenance cost for standby power systems. Also, the company says, the C & D power system can be supplied in a wide range of sizes depending on the recharging time required, for 8 hours, 12 hours, 24 hours, or 36 hours.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Suitable for use where station load is relatively constant and batteries are maintained automatically at a floating voltage of 2.20 volts per cell, C & D says that no adjustments are required, and the batteries do not require equalizing charges.

This power supply automatically adjusts to the battery's requirements. No manual manipulations are necessary. Because the battery regulates the charge, harmful overcharging is nonexistent. Thus, battery life is increased, frequency of water additions is reduced, and the entire problem of maintenance is decreased.

Because the characteristics of silicon rectifiers do not change with time under normal operating conditions, no aging taps are necessary. The power supply does not require auxiliary sensing circuits or control devices.

The charger is factory preset to carry a constant load. DC output voltage is regulated to within very close tolerances for relatively wide AC input fluctuation. DC output voltage is also regulated to within very close tolerances for any constant load between 20 per cent and 100 per cent of the DC current rating. Request NP-1774.

•

INCINERATING TOILET—Incinolet with Candor, newest model electric incinerating toilet of Research Products Mfg. Co., has been in use in microwave and repeater stations the past six months.

The new model Incinolets, both TR and SM sizes, feature Candor, catalytic odor reduction method developed by Research Products to carry off human waste effluents during the units'

process of decomposing waste solids and liquids into sterile, odorless ash. The company states Candor catalyzes human waste odors below the threshold of sense of smell, and is self-sustaining in supply within the 80-pound Incinolet disposal plant.

Model TR Incinolet serves an installation of from five to nine men, and Model SM from two to five. Both units have been in use for the past four years within transformer stations, radar sites, mobile operations vans, executive buses, field trailers, and certain elevated ground equipment.

Research Products plans the introduction of its UR Model in early 1962 as an adjunct to Models TR or SM for heavy restroom traffic situations common to large operations areas permanently remote from municipal water sewerage. Model UR Incinolet will serve as a urinal in the company's line of electric incinerating sanitation systems. Request NP1775.

•

1962 TRUCK SERIES—The Studebaker Champ truck series in ½ and ¾-ton models is said to combine a comfortable, attractive cab with the functional strength of a truck.

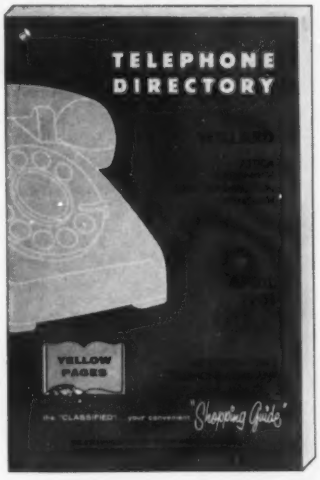
For 1962, Studebaker reports its Champ features a 170-cubic inch six-cylinder over-head valve engine, power-matched to the truck's gross vehicle weight rating.

The power plant develops 110 horsepower at 4,500 rpm, with a torque rating of 156 at 2,000 rpm. The compression ratio is 8 to 1.

Designed, the manufacturer states, to produce maximum power for its size, the engine has large valves placed in staggered arrangement, a ram-type intake manifold and large passages in the head and carburetor throat. A kidney-shaped combustion chamber with ample quench area is said to assure smooth operation and reduced detonation during the combustion cycle.

The Studebaker Champ engine also is reported to feature a high capacity oil pump, camshaft with a long-ramp, low acceleration cam, and a fully-counterweighted camshaft. A low acceleration cam permits the use of relatively light weight valve springs. Noise is reduced as the long cam picks up valve clearance more slowly.

Two V-8 engines are also available for the Studebaker Champ. One is a 259-cubic inch power plant with 180 horsepower at 4,500 rpm. The other has a 289-cubic inch displacement



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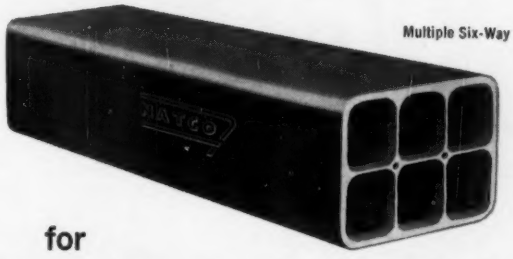

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and develops 210 horsepower at 4,500 rpm.

The Champ is offered by Studebaker in 5,000, 5,200 and 7,000 pound GVW (gross vehicle weight) ratings. A choice of 112 and 122-inch wheelbase is offered in the 5,000 and 5,200 pound models. The 122-inch wheelbase is standard on the 7,000 pound models. All models are offered as a chassis cab.

The ½-ton with 112-inch wheelbase is offered with a 6½ foot pickup box, and the 122-inch wheelbase model is offered with either an 8-foot pickup box or 8-foot platform or stake body.

The ¾-ton model with its 122-inch wheelbase is also available with an 8-foot pickup box or platform or body.

Three-speed transmissions are standard on all Studebaker Champ trucks. Optional on all models are overdrive, four-speed transmissions, or automatic transmissions. Request NP-1776.

•

MEDIUM, HEAVY DUTY TRUCKS—The Studebaker Transtar series for 1962 includes the one-ton, 1½-2 ton, and the 2-ton heavy duty models in the medium and heavy duty series.

One-ton models are powered by the 259-cubic inch V-8 engine, with the 289-cubic inch V-8 engine optional. It has a 9,000-10,000 pound GVW rating, a 131-inch wheelbase and a stake or pickup body length of 9 feet.

The 1½-2-ton models have 16,000-18,000 GVW ratings, with the 259-cubic inch power plant standard and the 289-cubic inch engine optional. Wheelbases are 131 inches for 9-foot bodies, 155 inches for 12-foot bodies, and 171 inches for 14-foot bodies.

Four-speed transmissions are standard equipment, with five-speed, direct or overdrive transmissions available optionally.

The 2-ton heavy duty models have 19,500-23,000 pound GVW ratings. Body lengths range from 9 to 14 feet, and wheelbases from 131 to 195 inches. An 18-foot body can be accommodated on the 195-inch chassis.

Studebaker states that Torque Star 289-cubic inch V-8 engines, that develop 210 hp at 4,500 rpm, power the heavy duty models.

All Studebaker Transtar models are supplied as a chassis-cab or chassis-cab with platform or stake bodies. Request NP1777.

•

DIESEL TRUCKS—Studebaker Diesel trucks for 1962 are rated at 16,000—23,000 pounds gross vehicle weight, and 29,000 through 41,000 pounds gross combination weight. Wheelbases range from 131 to 195 inches with four wheelbases available.

The Series 53 four-cylinder, two-cycle engines manufactured by the General Motors Detroit Diesel Division power the Studebaker Diesel.

The engine, Studebaker says, produces 130 horsepower at 2,800 rpm, and engine speed normally reached in truck operations. It delivers 271 foot-pounds of torque at 1,500 rpm. Power plant is 212.3 cubic inches. Compression ratio is 17 to 1, and the engine has a 3⅞ inches x 4½ inches bore and stroke.

The company states that a precise fuel injection system, which controls fuel consumption in far closer proportions to power output than gasoline engines, enables the Series 53 diesel to obtain fuel economy in stop and go driving.

The Series 53 engine reportedly has been designed to run from 200,000 to 300,000 miles without overhaul.

Diesel engines are said to eliminate the 18 per cent of truck breakdowns due to ignition failure. Valve life is prolonged by lower exhaust temperatures, while their lower revolutions produce less wear.

The electrical systems are equipped with a 30 amp. generator and a 140 amp. battery. Transmissions are direct four-speed, with an optional choice of direct five-speed or overdrive synchromesh.

All models are offered with a chassis and cab, or chassis with cowl. Request NP1778.

Exide Assigns Robertson to National Telephone Sales

O. L. Robertson has been appointed by Electric Storage Battery Co.'s Exide Industrial Marketing Division to handle special assignments on national sales accounts in the telephone field.

Mr. Robertson was formerly manager of the service engineering division from 1957 until his appointment as motive power market manager in

O. L. ROBERTSON

1959. He has been with Exide for 33 years.

From 1945 to 1957, he was branch sales manager in the Dallas area. He served previously in branches in Washington, D. C., Kansas City and Denver.

Prior to joining Exide, Mr. Robertson studied mechanical engineering at the University of Colorado where, following graduation, he was an instructor in engineering mathematics. Later, he taught mechanical engineering at the University of Wyoming.

A. B. Chance Co. Purchases Pitman Mfg., York Body

The A. B. Chance Co. and the Pitman Mfg. Co. have announced that Pitman has now become a wholly-owned subsidiary of Chance as a result of a stock exchange. It is also announced that the assets of the York Body & Equipment Co. of York, Pa., have been purchased by Pitman.

A 49 per cent interest in the Pitman company had been acquired by Chance earlier this year. Since this earlier transaction, the two companies have been jointly studying the possibilities for combining tools and mechanical equipment to simplify high voltage line maintenance. This program will be intensified to provide new and better answers for customers needs, the Chance company stated.

Chance engineers, who design and test hot line tools and power tools often used with Pitman aerial platforms and who design anchors that can be installed with Pitman hole boring equipment, will have greater opportunity to coordinate techniques with Pitman engineering personnel, it was pointed out. Also, the engineering staffs of both companies will have full use of the new Chance Engineering Research Center recently opened in Centralia, Mo.

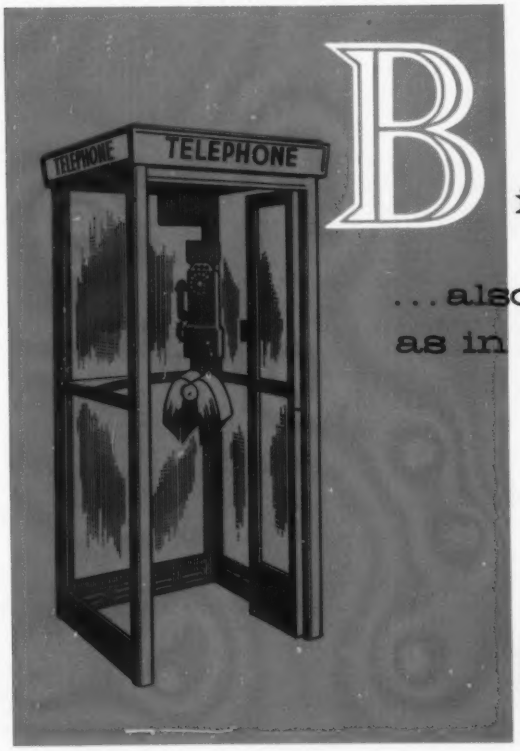
F. Gano Chance, chairman of the board of the A. B. Chance Co., has announced that Raymond F. Pitman, president, and Wayne R. Stallard, executive vice president of Pitman Manufacturing have been elected vice presidents of the A. B. Chance Co.

Mr. Chance said that the new subsidiary will continue under the management of Pitman executives and that Pitman will continue to use its established distribution channels for the sale of Pitman products.

The Pitman company was organized by Mr. Pitman 12 years ago in Kansas City. It has developed new truck-mounted hydraulic equipment to mechanize construction and maintenance of power and communications lines. Pitman outgrew its original home in Kansas City four years ago and moved to a new plant in suburban Grandview, Mo.

The York Body & Equipment Co. was formerly a wholly-owned subsidiary of the Twin Coach Co. Operations there will now be directed by the Pitman company and it will be known as "York Body, a division of Pitman Mfg. Co."

York Body, a 35-year-old company, has been a supplier of special purpose truck bodies, vans and trailers to utility companies. The assets purchased



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F. Gano Chance and Raymond F. Pitman issued the following joint statement relative to the merger and purchase: "The growth potential for public utilities is continually improving. As suppliers of this industry, we can now provide our customers with a more complete equipment package, consisting of both special bodies and hydraulic equipment as well as many new related products in progress to meet their special needs."

Elg Retiring at Copperweld; Raasch Midwest Sales Head

Erich G. Elg will retire as midwestern sales manager on Dec. 31, and will be succeeded by Roy C. Raasch, according to an announcement made by George Hamburger, manager of sales of Copperweld Steel Co.'s Wire & Cable Division.

E. G. ELG

A native of Green Bay, Wis., Mr. Elg was graduated from the University of Illinois with a B. S. degree in electrical engineering.

His first job was with the Illinois Power Co.

Three years later, he joined Copperweld Steel Co. where he has served in various sales and managerial capacities for 38 years.

He plans to travel extensively after his retirement.

Born in Watertown, S. D., Mr. Raasch was graduated with a B. S. degree in electrical engineering from Iowa State College.

After seven years with the Public Service Co. of Northern Illinois, he became associated with Copperweld as a sales engineer covering a number of Midwestern states.

His most recent assignment was as district manager in Cleveland.

R. C. RAASCH

Mr. Raasch will make his headquarters in Chicago.

He is a member of the American Institute of Electrical Engineers, the Association of American Railroads, the Independent Telephone Pioneers, and the International Association of Electrical Inspectors.

Microwave-Carrier Symposiums Scheduled for Collins Radio

The future schedule for microwave and carrier symposiums sponsored by Collins Radio Co. was announced on Dec. 3.

Cities and dates announced include Washington, D.C., Dec. 11-15; Cape Canaveral, Fla., Jan. 10, 1962; Columbia, S.C., Jan. 18, 1962; Birmingham, Ala., Jan. 25, 1962; and St. Louis, Mo., Feb. 6-7, 1962.

Several hundred persons attended the symposium held during the middle of November in New York City. During that event, those present witnessed a live demonstration of a microwave system operating in the 11-kmc band, utilizing Collins' MX-106 transistorized carrier.

Technical discussions at the New York meeting were led by L. M. Fisher, manager of the microwave systems engineering; and T. L. Leming, director of microwave and carrier research and development for Collins.

Iowa Independents Set 1962 Convention, 4 District Meets

The Iowa Independent Telephone Association, now making plans for its 1962 convention, reports it expects an attendance of 800. Meetings are to be held on Mar. 19 and 20 in Cedar Rapids, at the Roosevelt Hotel.

Plans are also being made for four district meetings, to be held early next year. Those scheduled are at Waterloo, on Jan. 9; Fort Dodge, on Jan. 10; Atlantic, on Jan. 11; and at Oskaloosa, on Jan. 16.

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Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

International Creosoting and Construction Co., Galveston, Texas—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

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Appointment of General Manager
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QUALIFICATIONS: Corporate Members of the Institution of Electrical Engineers or equivalent with long experience in management, including the planning, operation, finance and economics of a telephone undertaking. Candidates should be familiar with the Automatic System Strowger 50v.

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Application forms are obtainable from the Secretary, Singapore Telephone Board, Telephone House, Hill St., Singapore 6, and should be completed and returned on or before 31st January 1962.

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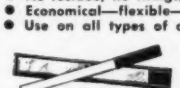

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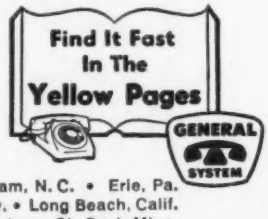

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